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AN ANALYSIS OF THE BUSINESS OF THE POULTRY PRODUCERS OF CENTRAL CALIFORNIA

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Production of eggs in the United States has been increasing somewhat more rapidly than has the population. The rate of increase in production was somewhat more rapid between 1880 and 1900 than between 1900 and 1920; between 1920 and 1924 was another period during which the increase was accelerated. Figure 1 shows graphically the relation which has existed between egg production and population.

PRODUCTION AREAS

Figure 2 shows the geographic distribution of this production, as reported through the census, in 1924. At that time, the total United States production was estimated to be 1,913,238,088 dozen eggs.³

¹ This study of the Poultry Producers of Central California, with headquarters at San Francisco, Calif., was undertaken at the request of the board of directors, by the division of cooperative marketing of the Bureau of Agricultural Economics, as a part of its program of economic research in cooperative business organization among farmers. The study, begun in September, 1926, involved a detailed analysis of all important features of the organization's operations. The board and the employees have aided materially by making available the records and files and by otherwise assisting the department representatives who conducted the study. Invaluable assistance has been rendered by various members of the staff of the Bureau of Agricultural Economics, especially by J. J. Scanlan, in collecting data and in the analysis of prices, and by E. B. Ballow, in assembling data from the association's records and in collecting and analyzing data regarding trade and consumer preferences in the New York City market. Credit is also due to Minnie A. Whelan and Katharine D. Dorrance for much assistance in the statistical computations and analyses.

² The division of cooperative marketing was transferred to the Federal Farm Board by Executive order, October 1, 1929. The manuscript for this circular was prepared for publication before the transfer took place.

³ All data on production in this section are based on information published by the United States Bureau of the Census.

Although it is evident that the bulk of egg production is in the Middle West, there has been considerable discussion of the important producing area which is developing on the Pacific coast. In this area the production tends to be of a somewhat more specialized type, and attention is given mainly to the production of white eggs. For about 15 years, at least, the producing area around Petaluma, Calif., has attracted attention because of the increasing quantities of white eggs that have been shipped to eastern markets.

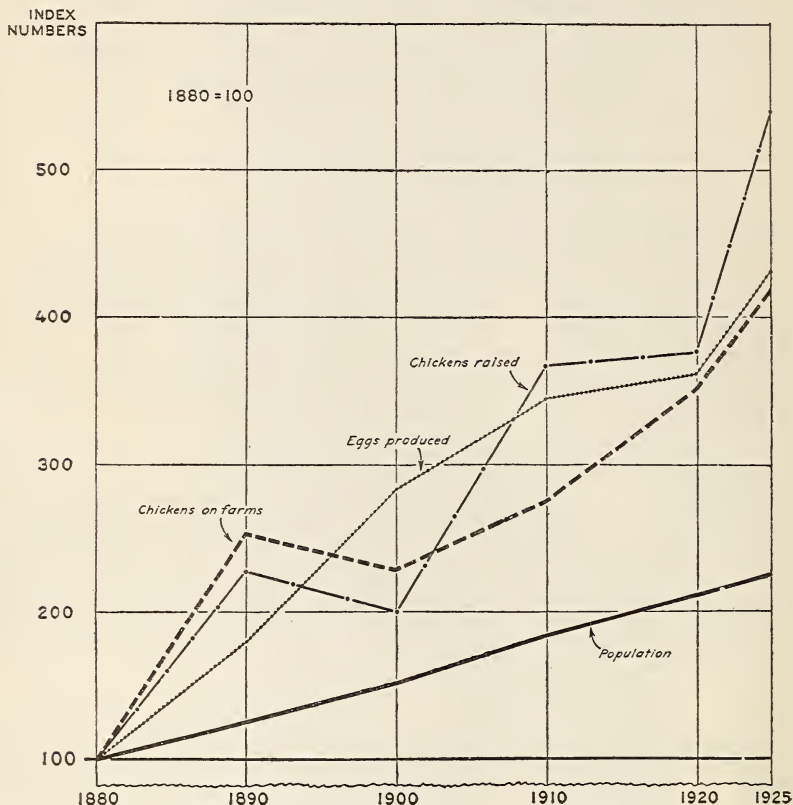


FIGURE 1.—POPULATION, AND PRODUCTION OF EGGS, 1880-1924

Egg production in the United States has increased more rapidly than has population during the period 1880-1924. (Based on the Census.)

The importance of the egg production on the Pacific coast is indicated by the fact that it comprised about $8\frac{1}{2}$ per cent of the total egg production for the United States in 1924, whereas in 1909 it was $4\frac{1}{2}$ per cent and in 1919, 6 per cent of the total. California alone produced about $2\frac{1}{2}$ per cent in 1909, 4 per cent in 1919, and 5 per cent in 1924—showing an increase of about the same rate as the total production for the United States. On the other hand, California produced about the same percentage of the total Pacific coast production in 1924 as in 1909—that is, 61 per cent in 1924 and 59 per cent in 1909. The proportion was slightly higher in 1919, about 64 per cent.

There are three centers of production in California: (1) That section which is roughly called central California, centering around San Francisco Bay and extending up the Sacramento Valley and down the San Joaquin Valley; (2) a section around Los Angeles; and (3) a somewhat smaller section around San Diego. In each of these sections a farmers' cooperative-marketing organization handles the products of the poultry producers, or some portion of them. This circular deals primarily with the central section in which the Poultry Producers of Central California operate. (Fig. 3.)

This territory produced, in 1924, about 68 per cent of the California production and about $3\frac{1}{2}$ per cent of the total United States production of eggs. Volume of production varies greatly among the different counties. Sonoma County, in which Petaluma is located, ranks first, with about 27 per cent of the total California production, or about 40 per cent of the production in the section in which the

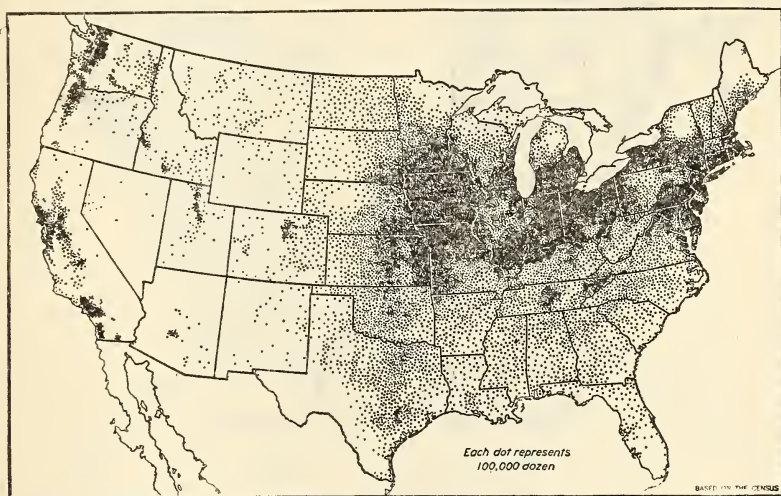


FIGURE 2.—EGGS PRODUCED IN 1924

The bulk of the egg production of the United States is in the Corn Belt. This is called the farm-flock area as distinguished from the commercial-producing areas, the most important of which has developed along the Pacific coast.

association operates. No other county produced as much as 5 per cent of the total California production. The density of production also varies widely. (Fig. 4.)

The usual method of measuring density of production appears to be based on the number of farms, or the political subdivisions, but inspection of available census data indicated that, in this instance, such a measure would be misleading because of variation in the size of farms, in the size of political subdivisions, and in the portion of their areas included in farms.

It was felt that a more accurate measure of production density could be had by dividing the total egg production of a county by the total area included in farms, thus obtaining a figure that represented egg production per acre in farms. Objections to such a measure could be raised, but it seems to be the most significant which can be computed from the available data.

In the 30 counties a wide range of soil, climate, and crop conditions is found. The soil ranges from light sand to heavy clay, through all variations of loam and semiarid soil.⁴ Toward the southern end of



FIGURE 3.—TERRITORY COVERED BY POULTRY PRODUCERS OF CENTRAL CALIFORNIA

The producing area of the Poultry Producers of Central California covers 30 counties which are grouped by the association in six district organizations.

the San Joaquin Valley a semiarid, rather sandy soil, is found, and with more or less variation this is somewhat true of all of the great interior valley of California, including the Sacramento Valley. The

⁴ Information relative to soil and climate is drawn from studies in agricultural geography by O. E. Baker, senior agricultural economist, United States Department of Agriculture.

territory north of San Francisco Bay and the Golden Gate is a series of rolling hills interlaced with narrow, warm, sandy valleys which are nearly ideal for poultry production. South of San Francisco Bay somewhat the same type is found.

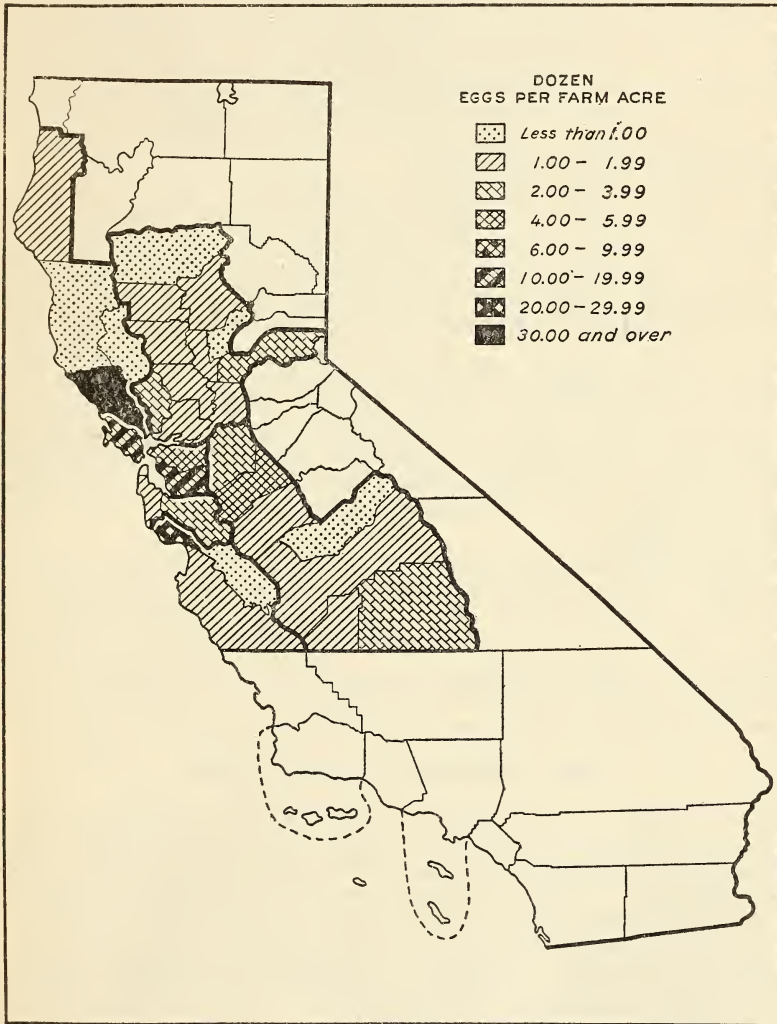


FIGURE 4.—DENSITY OF POULTRY INDUSTRY IN CENTRAL CALIFORNIA

Density of egg production, in the area in which the Poultry Producers of Central California operates, varies greatly. The most intensive production is in Sonoma County. (Based on the Census.)

The rainfall also varies widely. In about half the territory, it is less than 15 inches a year; this is, of course, in the interior valleys and especially in the southern parts of them. In about one-fourth of the area, south of San Francisco Bay especially, and in the northern part of the Sacramento Valley, the annual rainfall varies from 15 to 40

inches. In the remaining fourth of the section the annual precipitation is well over 40 inches; this is, of course, in the coast region and along the shores of the bay. About 65 per cent of the production is in the section in which rainfall is in excess of 25 inches. The climate of this section is tempered by the trade winds.

In most of the area the average date of the first killing frost is after November 1 and the average date of the last killing frost before March 1. A large portion of the section has on the average over 240 frost-free days. In a small portion, in the hills north of San Francisco Bay, frost occurs, at the earliest, about a month earlier in the fall and, at the latest, about a month later in the spring, with an average of approximately 210 frost-free days.

The method of marketing eggs, which developed in the early days in this section, was not very different from that which prevailed in other sections. The egg buyer, the peddler, and the country store each played its part in collecting and forwarding to the final consuming market the products of the poultry ranches. As San Francisco was the nearest large market, it naturally became the center of the egg trade. Some of the larger firms in San Francisco established standards of grading, but the application of these was often subject to suspicion on the part of the producers. They did not feel that the grading was always done equally well or in a manner satisfactory to all producers at all times. In addition, it was often suspected that storage eggs were mixed with the fresh receipts during the winter season when prices were high, and were sold to the public as fresh eggs, thus tending to depress prices.

At that time the quotations of the market were made on the San Francisco wholesale Dairy Produce Exchange. Most producers felt that these quotations were not made on a proper basis and did not always reflect the true market value. These and other conditions, which have usually been present in the minds of some producers with regard to almost any commercial marketing system, eventually created an unrest which resulted in early attempts at cooperative marketing.

EARLY COOPERATIVE ACTIVITIES

The forming of the present association was preceded by three attempts at cooperative activity. In 1905 the Sonoma County Cooperative Poultry Association, with headquarters at Santa Rosa, was organized. For the first three years it contracted for the sale of the eggs of its members to an independent dealer on the basis of market quotations less 5 per cent, with an agreed minimum price of 18 cents in the spring. In 1908 the organization decided to engage in business for itself, with an office and assembly plant at Santa Rosa and a distributing warehouse at San Francisco. At first practically all sales at San Francisco were made to wholesalers but, because of trouble which arose with the wholesalers, a plan was soon evolved to sell direct to retailers. This plan appears to have been unsuccessful in operation, for in November, 1908, the assets of this organization were sold to a private dealer, who contracted to buy eggs from members on a stipulated price basis with, as before, a guaranteed minimum.

With this new move the Sonoma County Cooperative Poultry Association reverted to its early status of a bargaining organization, and continued in much the same status until early in 1914, when the

Sonoma County Poultry Producers Federation was formed. The new organization had 10 locals, with general offices in Santa Rosa. Again its principal object was to act as a bargaining organization and contract for the sale of members' eggs to a private dealer, usually in San Francisco.

During 1914, 1915, and 1916 the eggs of members were sold to one dealer on the basis of exchange quotations, with a fixed minimum in the spring of the year. The members of the Dairy and Poultry Exchange in San Francisco, who were interested in buying eggs, appear to have resented the fact that one of their members bought eggs from a cooperative association, and for a time a serious price war was threatened. However, the members of the Poultry Producers Federation came to the support of their buyer, and eventually a solution satisfactory to them was worked out. This organization continued in existence until 1917, when the Poultry Producers of Central California was formed. As practically all the members of the older federation became members of the new organization, the older one passed out of existence, upon repayment to its members of the funds that were in the treasury.

Contemporary with the first two of these organizations, a third, called the Petaluma Egg Exchange, had been formed in 1909. It was, apparently, a competitor of the Sonoma County Cooperative Poultry Association. Its organizers were former members of the association who had become dissatisfied for various reasons and had withdrawn. At best, the exchange was loosely organized, with no capital and no definite method of binding members to the association. It was expected merely to sell eggs for members and make prompt returns out of cash receipts. After what appears to have been a rather troubled career of two years, it passed out of existence in 1911, with a net loss estimated at approximately \$30,000.

ORGANIZATION OF POULTRY PRODUCERS OF CENTRAL CALIFORNIA

On January 1, 1917, the Poultry Producers of Central California, a corporation organized under the California corporate laws, began business. This new organization was formed on the capital-stock basis because State laws regulating the establishment of cooperatives did not provide for the present nonstock form of organization.

The new organization, in common with centralized types, has a marketing contract directly between member and association. The first contract ran for three years, expiring in 1920; the second contract ran for three years, expiring in 1923. When the third contract was ready for signature a cooperative marketing law had been passed in California, as in many other States, and it was deemed advisable to reorganize the association as a nonstock, nonprofit organization.

For the first year the new organization contracted to sell all eggs received from its producers to the members of the San Francisco Dairy and Produce Exchange. This decision led to some dissatisfaction among the producers and on the part of at least one of the members of the poultry exchange, who had been active in working with the association. At the end of 1917, because they were somewhat stronger financially and because they were not any too well satisfied with the year's experience in selling eggs on a contract basis to mem-

bers of the exchange, the association decided to do its own selling and has continued that policy ever since.

In 1923 this association was reorganized with the idea of taking advantage of the cooperative laws which had been placed on the statute books since its organization in 1916.

The revamped association is a nonstock, nonprofit organization of the so-called centralized type. The working capital is provided by withholding from distribution to members a small portion of the money received from sales. There is a long-term marketing contract, running from the member to the central organization, without any intervening formal local organization, but the association does have branch offices⁵ which perform some of the functions of the usual local units.

The board of directors consists of 11 members who hold office for a single year. Ten of these directors must be producer members, residing in the district from which they are chosen; one is a so-called director at large, selected for the purpose of representing the public interests, and need not be a grower. This director at large is usually proposed by the director of agriculture of the State and confirmed by the membership. Each district has one director, except Sonoma district, which has five. (Fig. 3.) Meetings are held monthly, and are usually attended by the entire board. Meetings usually last a single day. The business of the association is gone over in detail. The directors receive a per diem fee, as determined by resolution of the board and expenses incurred in attending the meeting. No members of the board are salaried employees of the association.

The general offices are in San Francisco, where the clerical work of the organization as a whole, together with sales and other supervision, is concentrated; because of the variety of activities carried on at some of the branches, it is necessary, however, that considerable clerical work be done there.

OPERATING SET-UP

Branch offices are located at strategic points in the producing area for the purpose of facilitating the work of receiving, grading, and shipping the product and rendering other services to members. The fact that production tends to be concentrated around certain points has made practicable the establishment of large local plants where such operations as handling and grading can be efficiently performed. The largest of these plants is at Petaluma, where an average of about 2,000 cases of eggs per day are received and prepared for market.

On the other hand, the advantages which come from the establishment of branches introduce the problem, common in all such operations, of keeping efficiency at a high point. It is common experience that this requires unceasing vigilance on the part of the central office staff. Only rarely are organizations found in whose branches unit costs can not be materially reduced.

These local branches prepare and ship the produce under orders from the central selling office at San Francisco. A large portion of the eggs moves directly from these plants to distant markets; only those destined for consumption in the bay section are shipped there.

⁵ In 1925 there were 32 of these branch offices, including packing plants, feed stores, and egg-receiving stations.

These local branches provide important machinery for membership contact—the means through which the association should be responsive to the needs of its members, and the members responsive to the needs of their organization. The membership survey, discussed later, indicated that the members had made considerable use of these contact points, but it was also evident that the management could make much greater use of this valuable machinery for membership contact.

In the summer of 1926 the association engaged in the business of supplying feed for its members. This part of the operations was not included in the study of the organization, but it appears to be progressing satisfactorily.

The Pacific coast egg associations have established a joint selling organization, the Pacific Egg Producers Cooperative (Inc.), located in New York City, which handles all sales of eggs shipped by them east of the Rocky Mountains. The parent organizations have subscribed the capital for this company in agreed proportions and share in its operating costs on the basis of volume of business.

The Poultry Producers of Central California are interested in two other subsidiary companies. One, located in New York City, was inaugurated to take over the handling of certain special problems of merchandising and, for practical purposes, can be considered as a part of the New York agency. The other, in San Francisco, handles storage accounts, special types of merchandising eggs, and feed, as well as the purchasing of eggs when that seems advantageous.

FINANCIAL STRUCTURE

The volume of eggs handled each year and their gross sales value, as shown by the books and reports of the association, are shown in Table 1.

TABLE 1.—*Eggs received by the Poultry Producers of Central California, and sales value, 1917–1928*

Year	Receipts	Sales value	Year	Receipts	Sales value
	<i>Cases</i>	<i>Dollars</i>		<i>Cases</i>	<i>Dollars</i>
1917.....	213, 532	2, 382, 400	1923.....	631, 021	5, 900, 000
1918.....	270, 313	3, 712, 500	1924.....	627, 477	6, 425, 000
1919.....	315, 251	4, 680, 100	1925.....	782, 070	8, 080, 100
1920.....	460, 303	6, 939, 500	1926.....	869, 324	7, 935, 100
1921.....	662, 598	6, 905, 800	1927.....	977, 117	8, 516, 000
1922.....	618, 475	5, 730, 000	1928.....	1, 233, 482	12, 346, 598

The handling of such a volume of eggs (in addition to the feed business, which is a recent development) requires a large organization and financial structure. A condensed balance sheet for a typical month⁶ is shown, as such a tabulation probably gives about the most complete picture of the financial structure of the associations that can be presented. It must be kept in mind that the present financial structure is the result of a gradual growth, during which many changes have been made in both the policies and the structure of the organization. At times it has been deemed advantageous to acquire

⁶ This one is for the month ended October 31, 1927, but any other month would have served the purpose as well.

plant equipment for specific purposes. When these purposes had been served, it has been the policy to charge the cost of such property directly against the income derived from operating it at the earliest possible moment, rather than to hold it on the books as an asset, when there was no probable use for it in the near future. In some years, a more-than-normal depreciation has been charged when it seemed desirable to accelerate the amortization of certain other assets.

Condensed balance sheet of Poultry Producers of Central California as of October 31, 1927

ASSETS

Current assets:

Cash on hand and in banks.....	\$178, 720. 26
Accounts receivable (less reserves).....	628, 392. 42
Inventory—egg and poultry products and supplies.....	496, 371. 45
Eastern shipment account.....	249, 499. 37
Feed inventories.....	733, 321. 23

\$2, 286, 304. 73

Fixed assets: Real estate, buildings and equipment (less depreciation).....

437, 092. 99

Investments in affiliated companies.....

14, 360. 00

Other assets.....

24, 272. 81

Total assets..... 2, 762, 030. 53

LIABILITIES

Current liabilities:

Notes payable.....	\$800, 000. 00
Accounts payable.....	38, 297. 71
Due to producer members.....	238, 254. 27

1, 076, 551. 98

1923 reorganization.....

14, 427. 38

Reserves:

For contingencies.....	113, 692. 06
Deferred operating credits.....	458, 251. 38

Capital:

Advance fund.....	\$689, 704. 86
Feed finance fund.....	377, 815. 37
Membership fees.....	31, 587. 50

1, 099, 107. 73

Total liabilities..... 2, 762, 030. 53

One of the most significant features of the financial and operating structure is that which has to do with plant and equipment. In making investments in this class the management has decided each case on its merits. If conditions were such that ownership seemed desirable, purchase was made. If a lease could be obtained on advantageous terms for property which met the needs, then that course might be followed. In the practical working out of this policy, the association has acquired ownership of plants primarily devoted to egg handling at four points. These plants represent an investment of \$168,899. Six other properties are leased for essentially the same purpose, and on these improvements to the extent of about \$13,800 have been made. In addition, at four other points, investments have been made in properties aggregating nearly \$84,000 which belong primarily to the feed business. These properties are not exclusively for the use of one or the other branches of the association's business.

Wherever investment has been made out of a specific financing fund, as described later, the other branches of the business are allowed the use of a portion of the property on a rental basis.

In addition to this plant account, nearly \$200,000 is invested in various types of plant equipment used mostly for the egg department. Conspicuous among these items is the sand-blast machine used for cleaning eggs, and the processing machinery used for treating shells to aid in preserving the quality of the egg in its original fresh condition. There is a further investment in feed-mill machinery of nearly \$70,000, which will need to be increased as this new branch develops.

Inventories of eggs and poultry products tend to vary with the season of the year. They are large in the fall, when a considerable volume of products is in storage, and are smaller in the early spring, when these products have been sold. In October, 1927, such items amounted to about \$500,000, and the amounts in the process of liquidation by the eastern office, totaled about \$250,000. Feed inventories operate in much the same way, and about \$700,000 is required currently to handle such items.

Sales to customers on account amount to an additional \$600,000. These are short-time credits, and are collected regularly, but as this item ties up funds at all times it must be taken into consideration.

The egg department is financed by the revolving-fund method. The interest of individual members is evidenced by the issuance of "advance fund certificates." The first fund is now authorized in the amount of \$500,000, but is frequently more than this amount at a given time. The directors are authorized to retire certificates in numerical order, but only at the time of year when it is convenient for the organization to spare the money. Thus, during the season when the association's operations require that it borrow funds, the accumulations in the "advance fund" above the \$500,000 minimum can be used instead of obtaining new funds from outside sources. At the time of the statement shown, such funds in the association's hands amounted to nearly \$700,000.

The "advance fund" is obtained by withholding from producers 1 cent per dozen of all eggs delivered, as provided in the by-laws and contract. These deductions are accumulated and certificates which bear 6 per cent interest issued every three months in multiples of \$10. As the certificates revolve approximately once in two years, the member's investment is kept closely related to the use which he makes of the association's services. The advance fund may be increased at any meeting of the membership if due notice of such intended action has been given.

A second fund called the "feed finance fund" was started when the association entered the feed business, in 1926. The certificates of this fund, and its amount, are governed by the same general conditions as attach to the advance fund. The feed finance fund, however, was started by voluntary subscription of members, and by the issuance of certificates in payment for feed businesses or assets purchased by the association. Additions to the fund come from undistributed profits from the selling of feed, and from patronage refunds to members in the form of feed finance fund certificates. At the time of the October, 1926, statement the accumulation in this fund was nearly \$400,000.

With a capital of somewhat over \$1,000,000 available from these two funds, it is still essential that the association, in order to carry on its large business satisfactorily, obtain additional funds at certain seasons. The principal sources are the commercial banks with which they do business. Interviews show that the bankers have a high regard for the association and its general business stability. They have loaned it large amounts on "open line of credit," so that it has not resorted to the use of acceptances, or warehouse receipts, which are so frequently used for collateral by cooperatives. There are other sources from which funds accumulate, such as credits on operating accounts of various kinds (in excess of expenditures but probably to be largely used up during the year) and money owed to producers between payment dates. Their aggregate frequently amounts to upwards of \$500,000.

Inasmuch as practically all eggs are sold within a short time after being received, warehouse facilities are not needed except for a small portion of the product, which is stored in commercial cold storages. At several of the plants limited cold-storage space is provided.

GRADING

From 1917 until July 1, 1926, eggs were "surface" graded by the association, on the basis of the accepted and more or less indefinite classifications current in the trade. Size, shape, shell texture, and color determined the sorting into Extras, Standards, Mediums, and other grades. For a portion of this time, until about 1922 or 1923, much of the product was accepted and sold on the basis of members' grading, except that a considerable portion of the eggs sold to retailers was candled. Some further candling was done to test the general quality level of the whole production.

As the association was constantly attempting to improve the trade's opinion of its product, the grading became more discriminating, and the organization came eventually to regrade all eggs, although still on the basis of outside appearance. Increasing competition finally led to the adoption of a program of complete grading on the basis of both appearance and interior quality, by the candling process. This change occurred on July 1, 1926, and has unquestionably improved the quality of the pack and its reputation in the trade.

The number of grades used, and the requirements of each grade have likewise been changed many times. The latest of these changes occurred near the end of 1927. At that time a scheme was introduced whereby eggs were graded into eight classifications, as follows:

Large No. 1: Eggs reasonably uniform in size, regular in shape, and with clean, sound, white shells; yolks only slightly visible and whites firm and clear; shrinkage not greater than one-eighth inch; minimum weight of each egg over 1½ ounces, with average weight of 24 ounces per dozen.

Large No. 2: Eggs, including browns, with reasonably clean, sound shells (not classified as Large No. 1) with maximum shrinkage of one-fourth inch, unless white is slightly watery, when the maximum shrinkage may be three-sixteenths of an inch. Minimum weight of each egg must be 1½ ounces, and average weight per dozen 24 ounces.

Large No. 3: Eggs commonly known as "dirties," "thin shells," also clean eggs that are shrunken too much to be classified as Large No. 2, but not in excess of three-eighths of an inch; weight same as Large No. 2.

Medium No. 1: Eggs having all of the characteristics of Large No. 1 eggs with this exception: The yolks may be much more plainly visible than the yolks of Large No. 1, and the shells may be light cream in color. Eggs are reasonably

uniform in size, with minimum weight of each egg over $1\frac{1}{2}$ ounces, and average weight of $20\frac{1}{2}$ ounces per dozen.

Medium No. 2: The quality and shells are similar to Large No. 2, the minimum weight of each egg being $1\frac{1}{2}$ ounces, and the average weight 20 ounces per dozen.

Medium No. 3: The quality and shells are similar to Large No. 3, and the weight the same as for Medium No. 2.

Small eggs: Eggs which have the quality characteristics of Medium No. 1, Medium No. 2, and Medium No. 3, with a minimum weight for each egg of $1\frac{1}{4}$ ounces, and an average weight of over 16 ounces per dozen.

Commercials: Dirty eggs with a shrinkage in excess of one-quarter inch; also dirty eggs with watery whites and a shrinkage in excess of three-sixteenths of an inch; also "mud balls," "grass" eggs, "checked" eggs, and "watery" eggs; also eggs with small "blood spots"; also eggs which have a shrinkage in excess of three-eighths of an inch; and also medium eggs with a shrinkage of three-sixteenths of an inch if whites are watery. The minimum weight is 20 ounces to the dozen.

These new grades are not identical with the Federal grades, but the factors taken into consideration are largely those used by the Federal graders, and it is not difficult to make approximate comparisons.

The present grading policy is aimed toward producing a pack, for each of the association's brands, of as nearly unvarying quality as possible. Such a grading policy, if strictly adhered to at all times, will at least tend toward the creation of a trade preference for those brands. Nothing is gained by placing a brand on a product when the quality is shifted up and down in response to changes in the relative strength of the market. Such practice creates uncertainty in the mind of the buyer as to just what is being purchased and unquestionably tends to depress the price which he is willing to pay for the brand.

POOLING PRACTICES

The association does not operate a so-called "pick-up" system, as it is the member's responsibility to get the eggs to the receiving station. Several pick-up routes are operated at members' expense, under the association's supervision.

The pools are closed weekly, and all eggs received during the week from Thursday to Wednesday are included in the weekly pool, for which payment is made during the early part of the following week.

The territory is divided into districts. The eggs from each district form a separate pool, which is paid for on the basis of the sales realization of those eggs. The reason for this district pool system is the practical working out of the merchandising program. For instance, although the eggs are all graded under the same rules, certain localities do not produce in sufficient volume to make eastern shipping practicable, because it is impossible to accumulate, within a reasonable length of time, a carload of the quality required. Those brought in first would show much more shrinkage and would give the car an undesirable variation in the quality of goods.

When such goods are offered to the buyer, this variation in quality creates a doubt regarding the dependability of the grading, and has a tendency to depress the price and to widen the differential between those eggs and the best that the market affords. Furthermore, such variations tend to discredit the whole pack of the association. The best policy demands that the products from such localities be sold in local markets. As a result, the Large No. 1 eggs, for instance, from some localities are sold for less than those from other more favorably situated localities. This represents a thoroughly sound principle in

pooling, but one which often tends to create dissatisfaction among members who do not understand the entire situation.

At the time the pools are closed, it may frequently happen that a considerable portion of the eggs in a given pool have not been sold but are in the hands of the association, in transit to eastern markets, on the selling floors, or in storage. It is necessary to place on these eggs some value, as near as may be to the probable sales value. Such values are estimated in the light of seasonal and other market conditions, but the tendency should be to underestimate rather than to overestimate this probable sales value. When this is done, the probability of financial embarrassment to the association because of overpayment of growers is reduced to a minimum.

In consequence of this tendency to place a "safe" estimated value on the unsold eggs in the weekly pool, the weekly pool price is frequently somewhat below the price actually realized and becomes in reality an advance, which is usually very close to the market value. The difference between this weekly pool price and the final sales realization is accumulated until the end of the year, and is then paid to growers as a deferred payment, at an average rate per dozen, in proportion to their deliveries.

THE CONTRACT

The association operates on what might be called a standard marketing contract, with some modifications. It has had three contracts during its life. The first, extending for three years from 1917 to 1920, was the ordinary long-time nonwithdrawal contract with the usual deduction clauses for expenses and other items and the usual penalty clause with enforcement provisions.

The second contract was for three years, beginning in 1921 and ending in 1923. This contract contained a withdrawal privilege under which members might withdraw by giving notice to the association in writing between October 1 and 15 of any year. It had the usual provisions for deductions to cover expenses, reserves, and liquidated damages.

The present contract became operative in 1924. Under its terms, it was to run through 1926. The association, however, had the option of notifying its members in writing and thereby extending the contract for three additional years; then for an additional period of four years, so that the contract actually has the possibility and probability of being a 10-year contract. As under the last contract, members have the privilege of withdrawal by notifying the association in writing between the 1st and 15th of October in any year. Such withdrawals become effective on December 31.

The membership is scattered over the area, with a concentration in the very intensive production territory around Petaluma. Altogether since 1924, and including producers who were members prior to 1923 and signed new contracts, about 3,600 contracts were signed up to December, 1926. Of these, 139 had been transferred to other producers, and 654 had returned their membership certificates for cancellation for various legitimate reasons. Thus, there were slightly less than 2,900 memberships outstanding, according to association records, at the end of 1926. During the high production points of the year, about 2,600 delivered to the association. This membership increased until there were about 3,900 members in November, 1928,

of whom about 2,950 were active shippers. It is roughly estimated by officials of the association that their membership comprises about 50 per cent of the poultry producers in the area covered by the organization.

MEMBERSHIP RELATIONS

An understanding of what the members think of their organization and its activities is vital to a successful solution of the membership problems.

To obtain this information, 176 members were interviewed,⁷ and answers to standard questions were obtained. Effort was made to ascertain the members' dependence on egg production as a source of income, the size of operations, expectations as to what the association could and had accomplished, the prevalent ideas regarding price-making forces, criticism of the organization, and similar data.

Of the 176 members interviewed, 20 per cent were in the Petaluma district, 16 per cent in Santa Rosa, 15 per cent in Hayward, 25 per cent in Santa Cruz, and 24 per cent in Modesto. Thus a sample was taken from each of the important districts.

Of these members, 22 per cent had 500 hens or under, 26 per cent between 500 and 1,000 hens, 35 per cent between 1,000 and 2,000, and 17 per cent over 2,000 hens. More than two-thirds of these members who had flocks of over 2,000 hens were in the Petaluma district. The flocks of 1,000 to 2,000 were generally distributed throughout the whole territory; Santa Cruz and Modesto had most of the flocks of 500 or under.

Thirty-six per cent of the members interviewed had been in the poultry business more than 10 years, and half of these were in the Petaluma district. (Table 2.) Approximately 50 per cent of the members interviewed obtained 100 per cent of their income from poultry; the majority of these were in the Petaluma district, although there were some throughout the other districts, except Modesto. The majority of those who have joined in recent years have been members who did not depend entirely on poultry as a source of income. Most of the members are owners of the property on which they operate; only a very small percentage are tenants.

TABLE 2.—*Location and type of members interviewed*

District	Members interviewed		Number of flocks having—				Number of members in poultry business			
	Total number	Percentage of total	Under 501 birds	501 to 1,000 birds	1,001 to 2,000 birds	Over 2,000 birds	Less than 4 years	4 to 6 years	7 to 9 years	10 years or more
Petaluma.....	36	20	0	4	11	21	5	7	6	13
Santa Rosa.....	29	16	3	7	16	3	7	3	6	13
Hayward.....	27	15	7	6	13	1	7	10	3	7
Santa Cruz.....	43	25	15	12	14	2	17	6	8	12
Modesto.....	41	24	14	17	7	3	9	14	5	13
Total.....	176	100	39	46	61	30	45	40	28	63
Percentage of total members interviewed.....		100	22	26	35	17	25	23	16	36

⁷ The members were interviewed by Walter W. Fuhrman, under the direction of H. E. Erdman, in charge of the department of agricultural economics, University of California. The discussion and the tables compiled from these interviews are based on a most helpful analysis prepared under the direction of Doctor Erdman.

The majority of the members interviewed expressed a somewhat indefinite idea of receiving general benefits as their reason for joining. Twenty-five per cent expressed a definite idea of having been dissatisfied with marketing conditions existing at the time. Probably one-third of those who were dissatisfied have joined the association in the last two and one-half years.

In general, there was a belief among members that the association would probably be able to influence prices. This was expressed in answering the question as to what they expected the association to accomplish. Ninety per cent replied in a way that indicated that the price influence was the important expectation. Of this group, one-fourth had joined the association in 1926 or in the early part of 1927. Not all were satisfied that the association had accomplished what they expected it to do, although approximately 70 per cent thought it had. Some expressed doubt and some made definite statements that it had not fulfilled their expectations.

In an attempt to ascertain the opinions of members as to how the influence on prices could have been made effective they were asked what, in their opinion, should govern the price of eggs. (Table 3.) Over 60 per cent replied that demand and supply should govern the price. About 20 per cent thought that the cost of production should govern, and 12 per cent thought that the producer should control the price. Careful examination of the answers developed the fact that there were no very definite ideas in the minds of the members as to what is meant by demand and supply.

TABLE 3.—*Replies to question regarding members' opinions as to what should govern the price of eggs*

Reply	Number of members replying who live in district named											
	Petaluma		Santa Rosa		Hayward		Santa Cruz		Modesto		All districts	
	Total	Per-centage of total	Total	Per-centage of total	Total	Per-centage of total	Total	Per-centage of total	Total	Per-centage of total	Total	Per-centage of total
Supply and demand ¹	19	11	16	9	19	11	26	15	32	18	112	64
Cost of production ²	11	6	6	3	6	3	9	5	5	3	37	20
Producers ³	4	2	5	3	2	1	7	4	3	2	21	12
No opinion ⁴	2	1	2	1	0	0	1	1	1	1	6	4
Total.....	36	-----	29	-----	27	-----	43	-----	41	-----	176	100

¹ Includes also such expressions as "production and demand," "the New York market," and "the number of eggs and the consumers."

² Includes such expressions as "price of feed" and "the government."

³ "The producers," "the association," "the farmer," etc.

⁴ These said they didn't know what should govern it, most of them adding "but it ought to be higher."

About half of those questioned believed that a larger volume would give the association control of the market and probably enable it to get higher prices. On the other hand, a great many believed this could not be done, but felt that a larger volume would be advantageous in that it would enable the association to merchandise its products more scientifically and effect the economies of large-scale operation. Twenty per cent felt that a more stable price should result, and some felt that they could obtain a better price without affecting the San Francisco market. About 10 per cent denied that a control of more

eggs would result in higher prices. A number of the replies indicated they thought that a larger volume would aid in working out an effective merchandising policy was more prevalent than the wish to control the supply for the purpose of market domination.

About 25 per cent of the members interviewed had definite criticisms of the association. The most frequent criticism by all classes of members was of the grading practice. In general, members seemed to feel the grading was not as uniform as it should be and not equally well done at all branches, and the large number of grades seem to be a source of dissatisfaction. There was but little tendency to criticize or to resent the close grading. Since these interviews were held considerable improvement has been made in the grading practice, especially in its uniformity. Aside from this one criticism there was no one general complaint; the others were scattered over a wide range of subjects.

One or two objections which came to light show that the members do not appear to have enough information about the business of the association. Printed matter and frequent letters are excellent mediums for disseminating information, but the most hopeful medium probably lies in the development of thoroughly trained and informed branch managers who can maintain close personal contact with individual members. This problem confronts every large cooperative and merits careful attention.

DELIVERIES

During the 11 years, 1917-1927, members have delivered to the association nearly 200,000,000 dozen eggs, starting with 6,405,960 dozen (213,532 cases) in 1917 and reaching 29,313,540 dozen (977,118 cases) in 1927. (Table 1.) Although no data are available to show what percentage of the production has been received each year, it is interesting that the increase in production for this period has been approximately 46 per cent. Available census data indicate that production in the area between 1910 and 1924 probably did not increase so rapidly. It would seem that the growth of the association probably is more than keeping pace with the growth of the industry in the area. Table 1 shows that the association's growth has been practically uninterrupted. In 1922, the volume was about $6\frac{1}{2}$ per cent less than in the previous year, and in 1924 it fell less than 1 per cent below that of 1923. Receipts in 1921 increased nearly 45 per cent over receipts in the deflation year, 1920, but receipts during the three following years did not show such a high rate of increase. Another large increase took place in 1925, and the volume has continued upward since that time.

A study of the year-to-year price changes does not indicate that deliveries are related closely to price.

SEASONAL CHANGES IN DELIVERY

A study of the rate of delivery indicates that the seasonal cycle is nearly constant; about the same percentage of the year's volume is delivered to the association at the same time each year. Maximum variations from the normal in this rate of delivery have never been more than $5\frac{1}{2}$ per cent. This maximum variation tends to occur during the period of greatest production, in April or May. Table 4 shows a normal delivery cycle, and the time and extent of variation in

different years. These variations appear to be due to climatic conditions which have brought about a change in the seasonal production cycle rather than to the price situation.

TABLE 4.—*Cumulative percentage distribution of annual deliveries of eggs, average 1918–1926 and variations from normal for indicated years*

Month	Average 1918– 1926	Variations from normal percentage			Month	Average 1918– 1926	Variations from normal percentage		
		1918	1920	1926			1918	1920	1926
	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>		<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>
January.....	6.76	+0.71	-2.29	-0.32	July.....	70.14	+3.70	-2.64	-2.87
February.....	15.52	-2.06	-3.83	- .41	August.....	77.68	+4.12	-2.73	-2.15
March.....	27.64	-2.12	-3.25	+ .38	September.....	83.79	+3.19	-1.09	-2.32
April.....	40.00	-2.63	-4.31	-1.21	October.....	88.95	+3.08	-1.22	-2.05
May.....	52.29	+4.84	-5.42	-3.01	November.....	93.98	+2.00	-1.30	+ .01
June.....	62.08	+4.26	-3.00	-2.15	December.....	100.00	0	0	0

CHANGES IN QUALITY

Table 5 shows the year-to-year changes in the relative portion of receipts graded into two important grade distinctions of the trade, with all other eggs thrown into one group. The "Dirty eggs" column has no relation to the figures in the "Others" column, but is a separate grouping for special purposes. As there have been changes in the number of grades used, only three classifications are shown; these represent, as nearly as possible, the early grade distinctions. Some of these grades were split into two or more classifications in later years, and the figures shown are consolidations of these new grades.

TABLE 5.—*Selected grades of eggs as percentages of total annual deliveries, 1918–1926*¹

Year	Total de- liveries	Extras or better ²	Pullets ³	Others	Dirty eggs ⁴
	<i>1,000 dozen</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>
1918.....	8,109	75.4	22.4	2.2	-----
1919.....	9,458	73.4	23.1	3.5	0.1
1920.....	13,809	71.6	24.3	4.1	2.3
1921.....	19,878	73.5	23.1	3.4	2.1
1922.....	18,554	74.0	22.4	3.6	11.9
1923.....	18,931	69.6	24.7	5.7	16.8
1924.....	18,824	68.0	26.4	5.6	20.7
1925.....	23,462	68.0	25.9	6.1	23.9
1926.....	26,080	68.3	27.8	8.9	22.2

¹ Candling was begun July 1, 1926, and may account for some of the variations here.

² Includes Dirty Extras and Specials.

³ Includes Dirty Pullets and Special Pullets.

⁴ Includes all dirty eggs separated from others.

In general, there has been a tendency for the percentage of the receipts grading Extras or better to decline. In fact, during only two years, 1921 and 1922, has there been an increase in the relative volume of the better eggs. At the same time there has been an increase in the relative volume of pullet eggs, which about offsets the decline in the larger eggs.

There are at least three factors to which a considerable part of this change can be attributed: (1) The gradual change in the strictness of grading which has taken place; (2) the declining premium for white eggs on the New York City market; and (3) the changes effected in

production practice in an effort to produce a maximum volume of eggs during the late fall and winter months.

From the beginning of operations to the middle of 1926, eggs had been "surface graded" by the association—that is, graded on the basis of size, shape, and shell color and texture. During this time, and especially beginning with 1922, the association was making an effort to increase the size and profitableness of its eastern business. As a part of this program there was a constant effort to improve the quality of its pack, and this in itself would tend to reduce the relative volume of the product falling into the higher grades. In the early part of 1926, further improvement in the pack was decided upon, and grading was placed upon a complete-candling basis, thus including interior quality among the grading factors. Naturally, this tended to reduce the relative volume of "Extras or better" eggs, at least temporarily.

As will be discussed later, the premium on white eggs on the New York City market has been declining steadily since 1921. This is probably a continuation of a previous course, which is not included in this study. The rate of decline appears to be about the same as that of the relative volume of "Extras or better" in the association. It is probable that this premium decline has, in some measure, affected the producers' efforts to give special attention to producing the maximum proportion of Extras. This has a further significance when it is remembered that the largest volume of this grade is produced in the spring, when prices and premiums are lowest, and when considered in connection with the following paragraph.

Producers insist that pullets are the only birds which can be depended upon to produce late fall and early winter eggs. Inasmuch as the prices of all eggs are highest at this season, and the premium on fresh white eggs is much greater than at any other season of the year, it is to be expected that the careful producer should so adjust his operations that he can have as many fresh eggs as possible for sale at this season. This is evident from a study of Table 6, which shows the average relative volume of eggs of these important grades for each 4-week period of the year. It shows a definite tendency to rely largely on pullet production during the late fall and early winter, when prices are highest and fresh eggs hardest to get. This tendency has increased in recent years. Another interesting point in connection with what appears to be an adjustment of production to market needs is that the rate of decline in the relative volume of Extras is greater in the highly specialized production district in Sonoma County than in the other districts, where egg production tends to be more of a sideline business.

TABLE 6.—Quantity of *Extras* and *pullets'* eggs as percentage of total deliveries, 4-week periods, 1918 and 1926

4-week period	Extras		Pullets		4-week period	Extras		Pullets	
	1918	1926	1918	1926		1918	1926	1918	1926
	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>		<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>
1.....	77.4	74.4	21.0	23.3	8.....	75.9	55.0	21.6	28.9
2.....	81.7	75.9	17.1	20.8	9.....	74.9	54.9	19.9	27.4
3.....	81.8	71.4	17.2	23.3	10.....	70.3	52.7	21.7	30.5
4.....	78.5	67.1	20.6	25.8	11.....	63.3	51.1	30.1	37.1
5.....	73.8	66.0	24.7	27.8	12.....	62.5	55.7	34.0	36.9
6.....	74.3	61.3	24.3	29.6	13.....	69.6	65.0	29.1	31.2
7.....	73.9	59.6	24.6	29.1					

The increase in the relative volume of dirty eggs is, in large part, the result of changes in the policies of the association. At one time members were permitted to wash their eggs. But as the trade feels that washed eggs will not keep satisfactorily, the delivery of washed eggs was forbidden except when the eggs were specified as such. At the same time dirty eggs were accepted by the association on a discount basis. This, naturally, induced members to wash their dirty eggs surreptitiously, and inspection could not always detect the fact. Finally, the association developed a method of cleaning these eggs by a sand blast. This plan has worked out satisfactorily, and dirty eggs are now being accepted at a differential which is about equal to the cost of cleaning. This has tended to increase the relative volume of dirty eggs, which become most numerous during the late winter and early spring months, when the weather is rainy. Relatively few pullet eggs are produced at this time; hence, most of the dirty eggs are of the grade of Extras.

CONSISTENCY OF DELIVERY

The development of a satisfactory merchandising program demands that the cooperative have a rather definite knowledge of the probable volume and grades of the product which its members will deliver. It is difficult to secure and retain the patronage of a group of customers who will look to the organization as a continued satisfactory and preferred source of supply unless the organization is at all times in position to meet their needs. For this reason, full and consistent delivery by members is important, especially with a commodity the production of which continues throughout the year.

Obtaining full and consistent delivery from all members constitutes one of the most important problems that confront the management of a cooperative association. In general, it is probable that only satisfied and loyal members can be depended upon to make full delivery; hence any study of the problems of an individual organization must include an analysis of membership performance, as well as their attitude toward the association. Only through such a study can the membership problem be understood or plans formulated for its solution.

As with most other organizations, little had been done in this direction by the Poultry Producers of Central California. Officials knew that (1) some of their members were inactive at certain seasons of the year because their volume of production at such times did not warrant shipment, (2) some members had gone out of the poultry business but still retained their membership certificates for various reasons, and (3) others were intermittently inactive for other reasons. But there had been no organized attempt to make this information a matter of record, or to make an analysis of the extent of such inactivity or the reasons for it, or to give systematic consideration to it in formulating plans for merchandising the product.

It is just as important for a cooperative organization to study these membership problems as it is to study the problems relating to financing, grading, and selling.

During September, 1926, the association made an effort to check up on members who were inactive, with the intention of reducing the membership. The method used was to send a letter to each inactive member and ask for a reply. Three hundred and twenty-five letters were sent out; 185 went to members who had been inactive for a con-

siderable time; 140 went to those who had recently ceased delivering eggs. Analysis of the replies showed that about 45 per cent of those who had been inactive for some time wished to have their membership canceled and the fee refunded. About 25 per cent of the other group were like-minded. About half of the remainder wished to continue as members with the expectation of delivering again at some future date; one-third gave no reason for retaining membership and the rest failed to give an answer from which any conclusion could be drawn.

Discussions with officials of the association brought out the fact that there were a number of producer members whose production was less than 1 case per week at the low point of the year. Evidently, it would be somewhat uneconomical for them to attempt delivery during this season. The management had, therefore, suggested that, at this low-production season, such producers dispose of their eggs through other channels. This suggested the desirability of ascer-

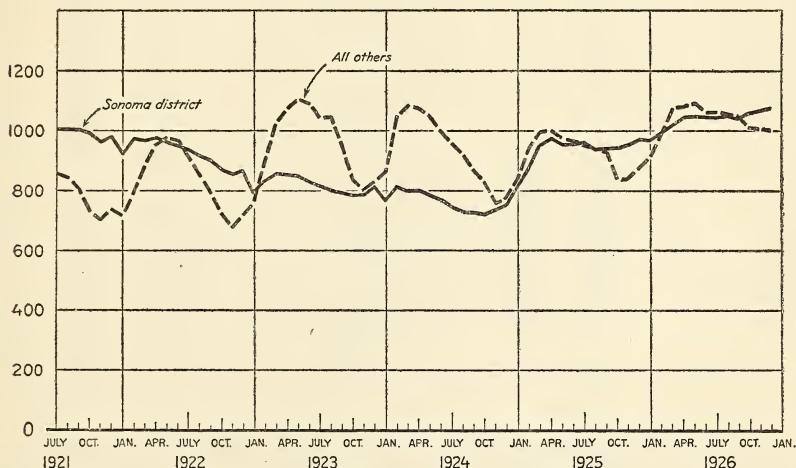


FIGURE 5.—MEMBERS DELIVERING EGGS

The number of shippers in the highly specialized districts tends to be less variable than in the other districts.

taining the extent of fluctuation in the number of active members, the areas of greatest change, and other factors.

Information was available that showed the number of shippers each week from 1924 to 1926, inclusive. After examination, the week in which the fifteenth occurred was selected as representative of the month, and the information was charted by districts. There was a similarity in the curves for all districts except the Sonoma district, in which Petaluma is located. Further study indicated that the data for these similar districts could be combined without changing the shape of the curve, and that this one curve and the one for the Sonoma district well represented the two types of members, as far as consistency of shipping was concerned; the curve for the Sonoma district, in which most of the producers are operating on a commercial basis with relatively large flocks, showed little seasonal fluctuation, and the curve for the combined other districts, where much of the production is carried on as a side-line enterprise, showed a decided seasonal change. (Fig. 5 and Table 7.)

TABLE 7.—*Members who delivered eggs each month, July, 1921–December, 1926*

Year and month	Number of members who delivered eggs from—			Year and month	Number of members who delivered eggs from—		
	Sonoma district	Outside of Sonoma district	Total		Sonoma district	Outside of Sonoma district	Total
1921				1924			
July.....	1,050	856	1,906	March.....	803	1,082	1,885
August.....	1,043	843	1,886	April.....	800	1,073	1,873
September.....	1,019	805	1,824	May.....	786	1,048	1,834
October.....	994	729	1,723	June.....	769	996	1,765
November.....	967	702	1,669	July.....	746	958	1,704
December.....	986	736	1,722	August.....	728	922	1,650
1922				September.....	727	869	1,596
January.....	927	715	1,642	October.....	720	828	1,548
February.....	969	793	1,762	November.....	734	757	1,491
March.....	967	881	1,848	December.....	752	777	1,529
April.....	975	951	1,926	1925			
May.....	990	973	1,933	January.....	816	836	1,652
June.....	949	968	1,917	February.....	876	942	1,818
July.....	935	911	1,846	March.....	950	999	1,949
August.....	914	850	1,764	April.....	974	1,002	1,976
September.....	900	794	1,694	May.....	955	977	1,932
October.....	872	721	1,593	June.....	954	968	1,922
November.....	852	676	1,528	July.....	959	951	1,910
December.....	868	716	1,584	August.....	937	938	1,875
1923				September.....	941	931	1,872
January.....	793	756	1,549	October.....	941	839	1,780
February.....	835	899	1,734	November.....	952	840	1,792
March.....	858	1,027	1,885	December.....	971	876	1,847
April.....	854	1,076	1,930	1926			
May.....	848	1,103	1,951	January.....	967	908	1,875
June.....	834	1,091	1,925	February.....	998	986	1,984
July.....	815	1,043	1,858	March.....	1,019	1,075	2,094
August.....	803	1,047	1,850	April.....	1,046	1,079	2,125
September.....	797	949	1,746	May.....	1,049	1,095	2,144
October.....	783	839	1,622	June.....	1,046	1,064	2,110
November.....	785	803	1,588	July.....	1,045	1,063	2,108
December.....	815	829	1,644	August.....	1,050	1,059	2,109
1924				September.....	1,039	1,050	2,089
January.....	768	865	1,633	October.....	1,059	1,010	2,069
February.....	813	1,043	1,856	November.....	1,067	1,008	2,075
				December.....	1,074	1,002	2,076

Inasmuch as it appeared that part of the membership delivered only part of the time, it seemed desirable to study carefully the performance of different groups of members with respect to delivery, and to attempt to discover the more important characteristics of each group. For this purpose delivery cards for 341 members were selected at random from the files. About 15 per cent of these were then (December, 1926) active shippers. The data concerning these members were analyzed in detail.

For the purpose of this analysis, any member who delivered 96 per cent of the time, or more, between his first delivery in 1924 and his last delivery, was placed in the consistent-delivery group; any member who delivered less than 96 per cent of the time was placed in the intermittent-delivery group. This was done on the assumption that consistent delivery meant not more than one week per year when eggs were not delivered. Further separation was made according to the average number of cases delivered per week during the period of actual deliveries, and the average number of deliveries per week.

The analysis indicated that 58 per cent of the members delivered consistently, and 42 per cent intermittently. (Table 8.) Whereas the number of members was about equally divided between the two

groups, the consistent-delivery group furnished 76 per cent of the volume of eggs delivered, and the intermittent group furnished only 24 per cent.

TABLE 8.—*Relative importance of members who deliver eggs consistently and intermittently*

Delivery group	Average number of cases delivered per week	Percent-age of total members in each size group	Percent-age of each delivery group by size	Percent-age of total deliveries contributed by each size group	Percent-age of group deliveries by size
Consistent ¹ -----	1	2.7	4.5	0.3	0.4
	3	9.1	15.7	4.3	5.7
	5	14.0	24.0	9.4	12.3
	7	16.6	21.8	14.1	18.5
	9	6.1	10.7	9.1	12.0
	11	3.3	5.4	5.1	6.5
	13	1.7	3.1	3.7	4.9
	15	1.7	3.1	4.5	5.9
	21	1.6	9.7	18.7	24.5
	31	1.2	2.0	7.0	9.3
	Total-----	58.0	100.0	76.2	100.0
Intermittent ¹ -----	1	5.6	13.2	.7	3.0
	3	20.0	47.1	6.2	26.0
	5	7.5	18.0	4.4	18.6
	7	3.7	9.0	3.6	15.2
	9	1.5	3.5	1.8	7.5
	11	1.5	3.5	1.6	6.6
	13	1.2	2.8	1.9	7.9
	15	-----	-----	-----	-----
	21	.8	2.2	2.2	9.2
	31	.2	.7	1.4	6.0
	Total-----	42.0	100.0	23.8	100.0
Grand total-----	-----	100.00	-----	100.0	-----

¹ Members who delivered 96 per cent of the time or more between first and last deliveries were classed as "consistent"; all others were placed in the "intermittent" group.

When the data were classified according to the average number of cases delivered per week (Table 8) interesting characteristics of the different sizes produced came to light. About 45 per cent of the members in the consistent group delivered an average of 5 cases or less per week, whereas over 78 per cent were of the intermittent group whose deliveries were 5 cases or less. Deliveries of this size accounted for a little over 18 per cent of the volume furnished by the consistent producers, and nearly 48 per cent of that furnished by the intermittent members. Evidently it is the small producer who tends to be an intermittent shipper. Some of this part-time delivery may be attributed to the association's policy of discouraging deliveries of less than 1 case per week, and part of it to small producers who tend to find other outlets during the low-production season. Other reasons, such as the sale of baby chicks and pullets and eggs for hatching purposes, may affect the deliveries of other, and probably larger, producers who are in this group.

The data were reclassified (Table 9) according to the average number of deliveries per week, by each member. In the consistent group, 46 per cent delivered once a week, and 52 per cent delivered twice a week. In the intermittent-delivery group 81 per cent delivered once a week, and only 19 per cent delivered twice a week.

The groups in which there were three or more deliveries per week are too small to be of much significance.⁷ It is evident then that, in the consistent group, the larger number deliver twice each week, and that, in the intermittent group, the majority deliver only once a week. Furthermore, in the consistent group, those who deliver once a week deliver only 30 per cent of the volume, whereas those who deliver twice a week furnish approximately 67 per cent. The opposite condition exists in the intermittent group; once-a-week deliveries are the more important in number and in percentage of the volume delivered by the group.

TABLE 9.—*Relative importance of consistent and intermittent delivery groups*

Average number deliveries per week	Consistent group		Intermittent group	
	Percentage of total in group	Estimated percentage of volume	Percentage of total in group	Estimated percentage of volume
1.....	46.2	29.6	80.7	63.2
2.....	51.8	67.4	18.6	36.1
3.....	2.0	3.0	.7	.7

An attempt was made to discover what effect frequency of delivery had on quality by computing the percentage of "Extras or better" delivered by each group shown in Table 9. Although these data indicate that the frequency of delivery had no consistent relation to the percentage of eggs which can be graded as "Extras or better," it is probable that more complete analysis based on a larger volume of data on the problem might furnish grounds for definite conclusions.

Further study of this problem, with the aim in mind of determining what size of operations and what production practices tend to combine and yield to the grower the highest percentage of top-grade eggs at a cost which affords maximum profits will certainly be of help to association members as well as to the management. This is especially important in view of the evident tendency to increase the quantity of pullet eggs produced. It is an important problem, the solution of which will amply pay for the effort expended.

ANALYSIS OF THE MARKET

There is no way of obtaining consistently a high price for a poor product. Prices better than the average of the market are realized only when a product accurately meets the needs and desires of the consumers. Furthermore, no one is going to pay a premium for a product when he is not confident that it will satisfy his particular need better than any other product. If a given brand, or grade, of product is to command prices which approximate the top of the market, it must be of a quality which meets the preferences of the buyer better than do most other similar products. Furthermore, an important additional factor in meeting that demand is that the quality of the brand or grade does not vary appreciably. Dependability is as important as satisfactory quality. It is noticeable that whenever a brand is established and buyers come to have confidence that it will

⁷ It is known that some producers who live close to Petaluma deliver daily, but they form a small percentage of the total membership.

be the same at all times, that brand tends to yield a premium over others, and to stand at the top of its market. It would seem, therefore, that one of the prime essentials for planning an effective merchandising program for any product is to understand thoroughly its price history, how the market reacts to different supply conditions, the peculiarities of demand, and some of the preferences encountered for particular grades, brands, or varieties.

In deficit areas, where there is a shortage of the commodity, domination by local supply may often seem to be true (although careful reasoning will show that it is not, for when price rises unduly, supplies will tend to flow in from other areas); but in an area which produces more of the commodity than can be consumed there, so that some of it must be exported to other areas, the price at the local point obviously will be affected by the total supply which may be available throughout the country. Because this is not clearly seen, there is often a tendency for some observers to accuse existing local agencies of being manipulators of the market.

QUOTED PRICES MUST BE INTERPRETED

Another factor which tends to confuse persons discussing supply, demand, and price relationships is the somewhat general tendency among persons outside a market to regard published price quotations as the prices at which the goods on the market actually sold. There are now comparatively few important commodities the published quotations for which are "actual market prices" in the sense of prices at which goods on the market at a given time changed hands. Quoted prices are often stated as ranges within which the bulk of the commodity on the market at the time was sold, sometimes as prevailing prices for specific qualities. It is important in reading quotations to note these details about quotations as well as the figure itself since actual trading is done "on the basis of the quotations," at prices varying from the quotation for one or more of several common reasons, of which quality differences, times, places, and the necessities of the traders are important. Comparison by shippers of prices received and quoted prices has sometimes led to the feeling that the published quotations are manipulated by interested parties, but such feeling can almost always be attributed to misunderstanding of the quotations. Especially when an attempt is made to present one figure as representing the price of a commodity at a given time and place there is a chance that all the different trades have not been included at their exact relative importance to "the average." But whatever the quotations, there are always some traders who consider the quoted price too high and others who consider it too low. Price quotations reflect the judgment of the reporting agency formed in observing the trading on the market. Even when all possible precautions are taken to make the quotations accurate, users of market price quotations must understand the usual relationships between the quotations and the prices they receive.

RELATION OF EGG SUPPLY TO PRICES

In understanding this market situation, it is essential to look at the history of the production of eggs in relation to population or consuming power. For 44 years, from 1880 to 1924, the number of eggs

produced was increasing more rapidly than population. (Fig. 1.) This rate of increase has been somewhat more rapid since 1920. It would be only natural, if production has been increasing more rapidly than population, to expect that prices, when measured in purchasing power, would have a downward trend. This trend is shown by Figure 8.

The way in which price often seems to be out of line with supply at a given market may be illustrated by the San Francisco market, or by almost any egg market in the United States except possibly New York City. The quantity of eggs coming to the San Francisco market is not, as a rule, the predominant factor in determining the price at San Francisco.⁸ This market competes with other markets for its share of the total national supply. This competition tends to keep prices of all markets about the same, when quality, time, place, and other such economic factors are taken into consideration. At times

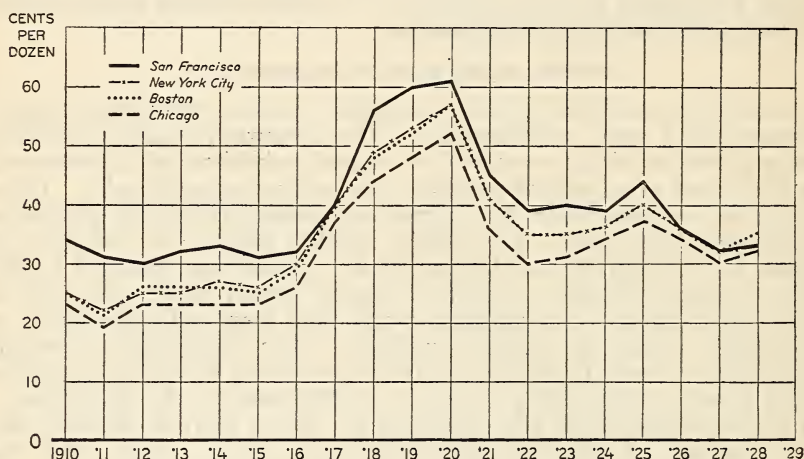


FIGURE 6.—ANNUAL AVERAGE PRICES OF EGGS AT FOUR MARKETS, 1910-1928

Annual prices of eggs at the four important markets tend to keep fairly close together. Prices for the years 1910-1925 are from the 1925 Yearbook of the United States Department of Agriculture; prices for 1926-1928 are from market news reports of the Bureau of Agricultural Economics. Prices at New York City and Chicago are for Fresh Firsts; for Boston, Western Firsts; and for San Francisco, Fresh Extras.

San Francisco must absorb quantities of fresh eggs which can not be shipped advantageously to more distant markets.

INTERDEPENDENCE OF MARKETS

That such situations do actually occur is indicated by Figure 6. The annual prices at San Francisco, Chicago, Boston, Philadelphia, and other markets tend to keep astonishingly close together. Regardless of how the receipts fluctuate and fail to keep together, the annual prices at these markets are similar. On the other hand, the New York price is closely related to the receipts of eggs in New York City. (Fig. 8.) In its final analysis, therefore, the quantity of eggs received in the New York City market is an important factor in determining the price of eggs at practically all other important markets

⁸ Correlation of monthly prices of Fresh Extras and receipts for the period 1917-1926 gives as a coefficient $r = -.24$.

in the country. Figures 6 and 7 show this relation. Figure 6 shows the way in which the prices of the other markets follow those at New York City. Figure 7 shows the way in which the trends of receipts at these other markets differ from those at New York City.

When monthly, weekly, or daily prices are used, there are many factors, such as changes in receipts, favorable or unfavorable weather, changes in the opinion of the trade as to the present and future demand, and other factors, which influence traders either to bid up or to bid down the local price. Short-time fluctuations obscure the existing demand and supply relations. The influence of many of these factors can usually be measured by proper statistical analysis. But statistical adjustments for these influences are frequently elaborate and are hard for the usual reader to recognize readily. Hence this discussion largely concerns influences which affect annual prices and annual supplies.

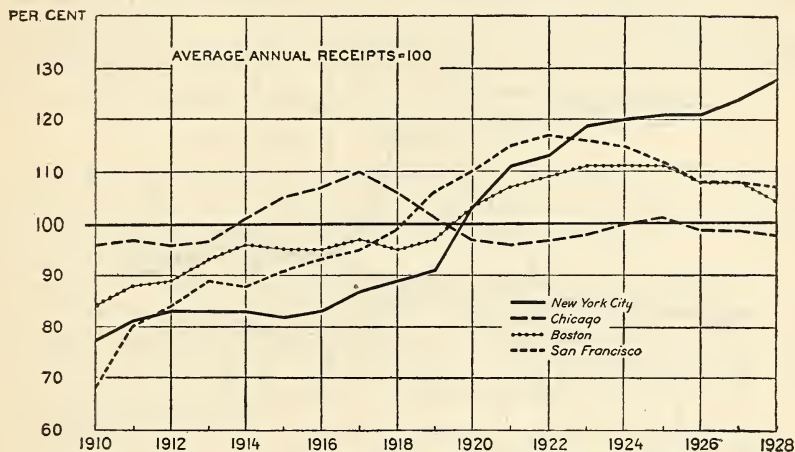


FIGURE 7.—RELATIVE EGG RECEIPTS AT FOUR MARKETS, 1910-1928

The trends of receipts at four important markets do not keep together as do the price trends. Receipts for the years 1910-1925 are from the 1925 Yearbook of the United States Department of Agriculture; receipts for 1926-1928 are from market news reports of the Bureau of Agricultural Economics.

Inasmuch as the price on the New York City market appears to have an important effect on the price in other markets, it may be helpful to visualize the relation between the supply and price existing in New York City. (Fig. 8.) In this kind of comparison the ever-changing price level of all commodities, that is, the year-to-year changes in the purchasing power of the dollar must be taken into consideration. Hence prices quoted in terms of current money must be adjusted to account for this change in the value of the dollar before accurate comparisons can be made. Figure 8 is constructed to bring this adjustment out; the actual prices are shown, together with the price adjusted to take account of the change in the value of the dollar.

There is little relation between annual receipts and actual annual quoted prices until these prices have been adjusted to remove the differences in purchasing power. Then a definite relation between sup-

ply (receipts) and price seems evident. Annual prices at the various markets apparently move in much the same manner. It should be evident, too, that there will normally be a price difference on the same quality between any two markets which roughly equals the cost of moving the product from one to another. When an attempt is made to study this difference and especially its short-time movements, by comparison of quotations, it is not unlikely that the real price difference will be obscured by at least some of the many difficulties with which quoted prices are burdened.

Furthermore, as stated, some of the day-to-day, week-to-week, and month-to-month prices may not show a close relation to supply, as represented by the visible part of supply known as receipts. At all times, price is affected by other factors, such as the quantity in storage, the experience in the storage deal of the previous year, ideas as to the type of production year which is developing in the various important egg-producing sections of the country, and the buyer's

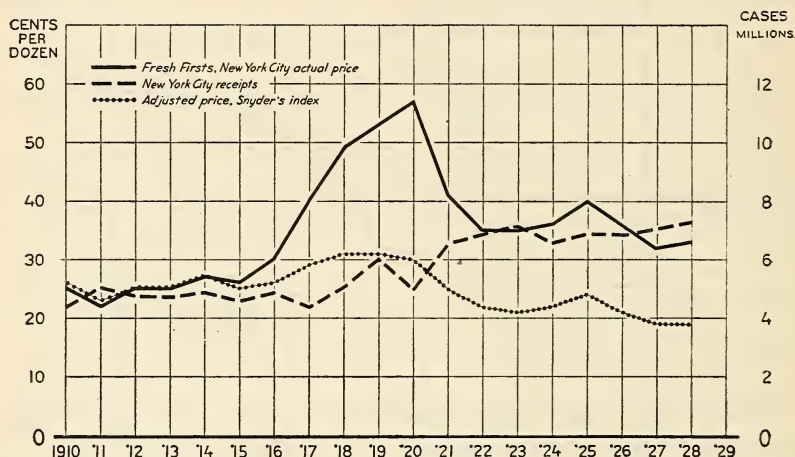


FIGURE 8.—RELATION OF PRICES AND RECEIPTS OF EGGS AT NEW YORK CITY 1910-1928

Purchasing power of egg prices on the New York City market tends to decline as receipts increase.

short-time estimate of the probable demand. In analyzing these intermarket spreads, other factors are also encountered such as, for instance, differences in grading and inspection rules. Furthermore, although the intermarket differential will tend to equal the cost of transferring from market to market, it is unlikely that it will equal this figure every day.

The relation between the price of Fresh Extras in San Francisco and Pacific Coast White Extras in New York City is a good example of this variation in intermarket spreads.

Over a period of five years the average difference in prices was about 11 cents. On the other hand, comparison of monthly prices shows that this difference is somewhat larger than the average during the period from September to February and somewhat smaller for the rest of the year.

Obviously, such variations are of importance to those traders who are anxious for a speculative profit, and they usually attempt to take

full advantage of the fluctuations. Their desire for such opportunities is equally well understood. The causes of the observed variations, however, are very little understood. Frequently it is alleged that the variations arise from manipulation. Possibly, at times, some part of the variation arises from this cause. There are, however, other factors, changes in which may be of at least equal importance.

Trade practices are often important. It is known that eggs which have been stored under advantageous conditions will frequently compare favorably with fresh eggs. In fact, it is often difficult, if not impossible even by the most exacting candling, to discover whether a given pack contains some storage stock mixed in with the fresh product. Although these storage eggs are probably as good as others for immediate consumption, they will not keep as well as fresh stock, nor are they satisfactory for shipment. A belief on the part of buyers that this is a common practice in the San Francisco market tends to widen the margin, for the buyer assumes an additional risk in handling such a product. This probably accounts for some portion of the increased spread in prices during the winter season.

WHITE EGGS AND THE GENERAL MARKET

Inasmuch as the producing groups and marketing organization under discussion are primarily interested in the market for white eggs, some study has been made of the trend of supply and price for white eggs in New York City.

For many years white-shell eggs have commanded a premium in this market, and the question is often raised as to why shell color has anything to do with interior quality. It may well be that shell color has come to be a symbol of certain production practices, rather than a thing to be desired in itself. These practices are associated with commercial production.

Commercial production of eggs usually produces better quality than is obtained from ordinary farm-flock production. In the former the whole operation is controlled more or less completely, and effort is made to apply the best scientific knowledge to the problem. The farm flock, on the other hand, roams at will and picks its food wherever found.

Success in commercial production depends, among other things, on large volume of eggs per bird. The heavy-laying breeds are usually those which lay white-shell eggs. Hence these white-egg breeds have been largely adopted by the commercial producer, and white shells have come to be in the New York City trade the badge of superior quality. Should the breeds that lay white-shell eggs become popular to any considerable extent, in less carefully managed farm flocks, it is possible that the preference on account of shell color would largely disappear.

The total estimated relative volume of receipts of white eggs in New York City from 1921 through 1928 increased from 15 per cent to 38 per cent, or more than doubled its relative importance in eight years.⁹ During the same time, receipts of white eggs from the

⁹ It is probable that the eggs shipped to New York City from the States of Washington, Oregon, California, Utah, Connecticut, Delaware, New Jersey, and New York are likely to be almost wholly white shells, and these have been used in computing this trend.

Pacific coast increased from about 7 per cent to approximately 18 per cent. (Fig. 9.) In this change, receipts of Pacific coast eggs are not increasing in relative importance as rapidly as is the total number of white eggs in the New York City market.

Inasmuch as the relative volume of white eggs is steadily increasing, it is interesting to discover what effect this increasing relative importance of the quantity of white egg receipts has had on the premium paid for them. The premiums or differentials have been computed by comparing the average annual quoted prices (after adjustment for the change in the value of the dollar) of Near-by Henny Whites,¹⁰ and Pacific Coast Whites¹⁰ with the prices for Fresh-gathered Firsts, a mixed grade which is probably largely brown eggs. Figure 10 shows the trend of the price differential in the New York City market for two important classes of white eggs from 1922 to 1928, inclusive. Inasmuch as the amount of premium

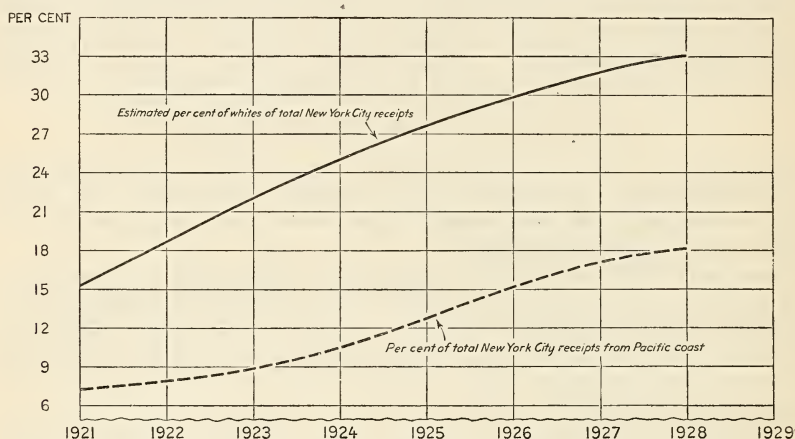


FIGURE 9.—RECEIPTS OF WHITE EGGS—PER CENT OF TOTAL RECEIPTS ON NEW YORK CITY MARKET

Relative volume of white eggs reaching the New York City market from all sources and also from the Pacific coast has increased rapidly since 1921.

depends on the particular grade of brown eggs which is selected as a base, the distance from the base to the premium line at any one point has no particular significance. The premium for 1921 is, therefore, taken as a base, and the premiums in other years are shown in relation to that in 1921. It is the trend or slope of this line which is important. A relatively steady downward tendency is evident.

By a comparison of the line for trend of white-egg receipts and that for trend of premiums (fig. 10), it seems probable that increased receipts of white eggs have tended to depress premiums because, as the relative volume of white eggs received in the New York City market has increased, the premium for them appears to have decreased. At the same time, there seems to have been little relation between the year-to-year changes in these two items, as may be seen from Figure 11. The decline in premium appears to be a long-time reaction due to the long-time change in supply conditions.

¹⁰ Quotations for the grade designated do not continue through the period under consideration. Hence a series has been constructed which is comparable in quality, as shown in fig. 10.

Although the general trend has been downward, there have been some shifts in the premiums for the different grades. The premium for Near-by Hennery eggs of the eastern production areas has decreased at a relatively constant rate, whereas that for Pacific coast eggs has not fallen so rapidly. These shifts are probably due to changes in demand which have been brought about through grading,

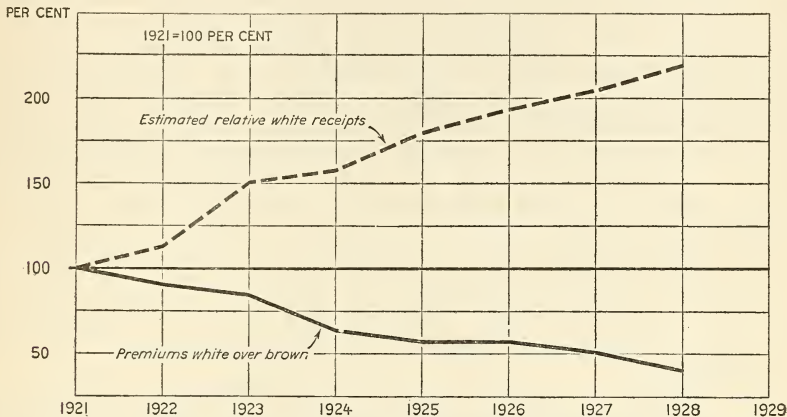


FIGURE 10.—WHITE EGGS: RELATIVE CHANGE OF RECEIPTS AND PREMIUMS ON NEW YORK CITY MARKET, 1921-1928

The premiums for white eggs in the New York City market have tended to decline since 1921. The increase in the relative volume of white-egg receipts at New York City has not been accompanied by a corresponding decline in the premiums.

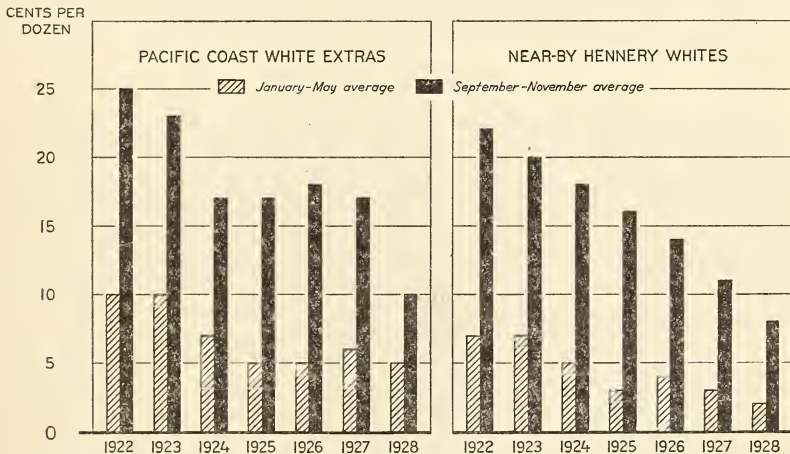


FIGURE 11.—PREMIUM FOR WHITE EGGS OVER BROWN, NEW YORK CITY MARKET, 1922-1928

The decline in premiums for white eggs in the New York City market has been relatively greater during the season when prices are highest.

and to the feeling, on the part of the trade, as to the reliability of the pack of Pacific coast eggs.

Another point that should be noted in connection with this matter of premiums is the way in which they have varied at different seasons of the year and for different years. (Fig. 11.) These data were obtained by comparing the average of the monthly prices for each

kind of white eggs (that is, Pacific Coast Whites and Near-by Hennerly White Extras) with similar prices for Fresh-gathered Firsts. Comparisons are shown for what might be called the high-price period (that is, September, October, and November) and for the low-price period (January to May, inclusive) of each year.

The same tendency for the premium to decline is evident, but the decline has been more rapid during the high-price period. This should be expected, for as the supply becomes greater, more and more consumers have to be drawn from those groups whose preferences for the highest quality eggs are less definitely fixed. These groups will buy the fancy product when the price is low enough, but are more willing to accept substitute grades, such as Medium eggs, Pullet eggs, and brown eggs, especially when the price is at its seasonal peak. To induce increasing numbers of these groups to continue as consumers of white eggs throughout the entire year and thus absorb the increasing supply, it is probably necessary either that the annual premium fall until it approximates the difference in the cost of production of the two grades, or that some steps be taken to stimulate consumer preference for these higher grades. Of course, this premium will tend to decline most rapidly during the season when it is largest.

The decline will probably stop when the differential ceases to be large enough to pay for the additional time and expense to produce the desired high quality. Then the supply per capita will tend to remain constant until new preferences are established. On the other hand, the premium for eggs with white shells, as compared with brown shells, may eventually disappear if the general quality level of whites should decline through the adoption of white-laying breeds in general farm flocks.

INFLUENCE OF STORAGE

The use of cold storage has come to play an important part in the marketing of eggs. It has undoubtedly benefited both the producer and the consumer. It can be statistically demonstrated that it tends to stabilize the seasonal swing of prices. During the period of surplus production, when producers sell the bulk of their eggs, storage tends to prevent prices in the producing areas from falling as low as they would fall otherwise and, during the months of scarcity, keeps consumers' prices from going as high as they might.

No data are available to show what proportion of the production normally goes into storage, but the quantity in storage, as indicated by figures from the Yearbook of the Department of Agriculture, is usually largest about August 1. The average holding (1921 to 1925) on this data is estimated by the department as 9,513,000 cases. The average annual receipts at the five large markets ¹¹ during this period, which, however, are probably less than one-fourth of the total production, were 15,733,000 cases.

Even though the volume of stored eggs is only a small portion of the total production, the fact that it forms a reservoir into which, and out of which, supplies flow in a way to prevent either excessively high or excessively low prices warrants its being given serious consideration in a study of the selling policy of a cooperative. It is

¹¹ New York City, Philadelphia, Boston, Chicago, and San Francisco.

desirable that the general relation of storage to the rest of the egg-marketing structure should be understood.

There seems to be an opinion among the trade that the volume purchased for storage is an important factor which governs the price paid for eggs going into storage. On an average, however, there seems to be little consistent relation between the quantity of eggs placed in storage and the price paid for them. Low prices do not appear consistently to induce storage of more than the normal quantity, nor do high prices tend to lower the storage volume. On the other hand, there is some indication that high prices are often associated with the storage of more than normal quantities, and low prices accompany the opposite situation. The price for eggs destined for storage appears to follow closely the general market price. (Fig. 12.) This price is determined by receipts.¹²

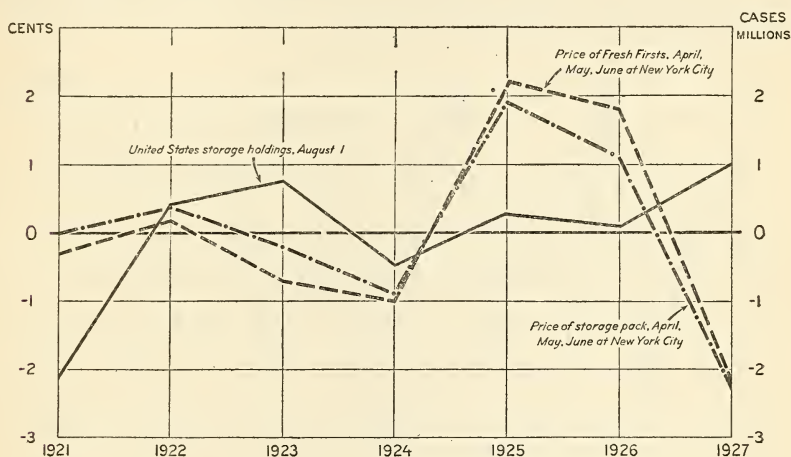


FIGURE 12.—RELATION BETWEEN STORAGE HOLDINGS AND PRICES. DEVIATIONS FROM AVERAGE FOR 1921-1927

Prices for storage-packed eggs in the New York City market during the into-storage season do not greatly affect the volume placed in storage.

It is noticeable, too, that the spread between the prices for the best refrigerator eggs and for fresh eggs of the highest quality has tended to decrease in the past five or six years. This is possibly a result of the increasing volume of fresh eggs in October, November, and December, a time when storage eggs were formerly the main source of supply. The competition of these fresh eggs has tended to force stricter selection of eggs for storage until there is little difference in the original quality of the packs.

Since the storage price in the spring appears to have little consistent relation to the quantity put in storage, the question arises as to what does determine the size of the storage deal. Such data as are available indicate that the relative profitability, or the storage margin, of the last storage season when compared with the average and with the last previous season is probably an important factor.

¹² The relation between prices for storage pack and cumulative receipts to June 30 is significant, correlation for the period 1910 to 1926 yielding a coefficient of -0.73 .

When August 1 storage holdings are compared with the normal holdings¹³ for that date in previous years, so that data showing whether the holdings of a given year are higher or lower than usual are obtained, it is noted that these storage holdings tend to swing from high to low in alternate years. (Fig. 13.) Comparison of this curve with the price of eggs that come out of storage (average monthly price of Refrigerators September to January at New York, 1916-1927), indicates that relatively large holdings of eggs in storage on August 1 were, during the period studied, associated with a relatively low price during the storage unloading season. The volume of storage eggs to be sold (that is, the holdings) seems to be the most important determinant of their price, and this price may bear little or no relation to the price of other eggs in the market, possibly for the reason that the trade tends to look on them as almost a different commodity, not too easily substituted for fresh eggs; hence the supply available will be the most important price-determining factor.

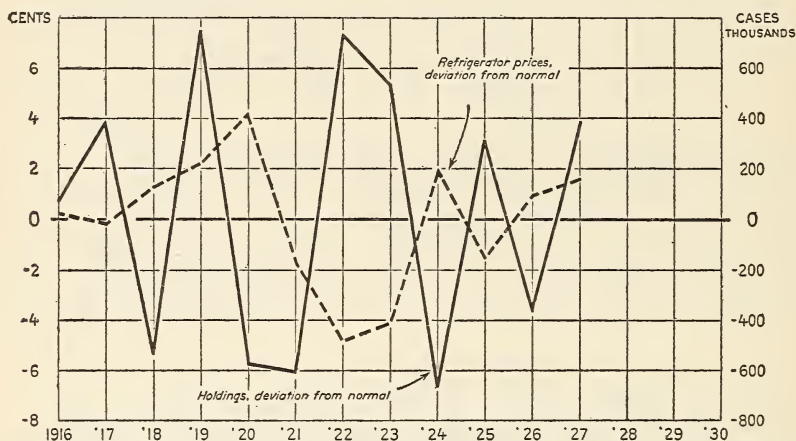


FIGURE 13.—UNITED STATES COLD-STORAGE HOLDINGS AND PRICES OF REFRIGERATOR EGGS AT NEW YORK CITY, 1916-1927

Storage holdings on August 1 are an important factor in determining the sale prices for storage eggs. The total United States cold-storage holdings for August 1, as reported to the Department of Agriculture, are expressed as deviations from a 3-year moving average; prices are averages of monthly quotations September to January, adjusted by Snyder's general price-level index for all grades of Refrigerators quoted for the New York market in the publications of the Urner-Barry Co., expressed as deviations from a straight-line trend fitted by the formula $y = a + bx$.

The storage margin as used herein is the difference between the quoted price during the storage season (April, May, and June) for "Storage pack" and that reported for eggs known as "Refrigerators" during the season when storage stocks are being sold (September-January). If the uncertainty of this margin is a factor in restraining storage activity, it is well to know what factors operate to affect it. The curve for margin tends to change direction in alternate years, but these changes seem in general to be directly opposite to those in the curve for storage holdings. (Fig. 14.) In other words, a high-storage holding in August seems to be associated with a low-storage margin for that year, and a low-storage holding in August seems to

¹³ "Normal" holdings were determined by fitting a 3-year moving average to the data as published in the Yearbook of the U. S. Department of Agriculture, 1916-1927.

be accompanied by a high-storage margin for that year. Another way of viewing it is that a high-storage margin seems to be followed by a high-storage holding the next year. Inasmuch as these tend to alternate from year to year according to the holdings on August 1, it seems not improbable that the feeling of optimism or pessimism resulting from the previous year's storage experience tends to influence materially the quantity of eggs which is put in storage for the current year.

PRICES FOR CERTAIN GRADES

The prices of the various grades of eggs follow the general market with a high degree of regularity. This general market price is determined largely by the supply of all eggs. Data are not available for a careful analysis of this matter. Such observations as were made tended to show that buyer preference, based apparently on the

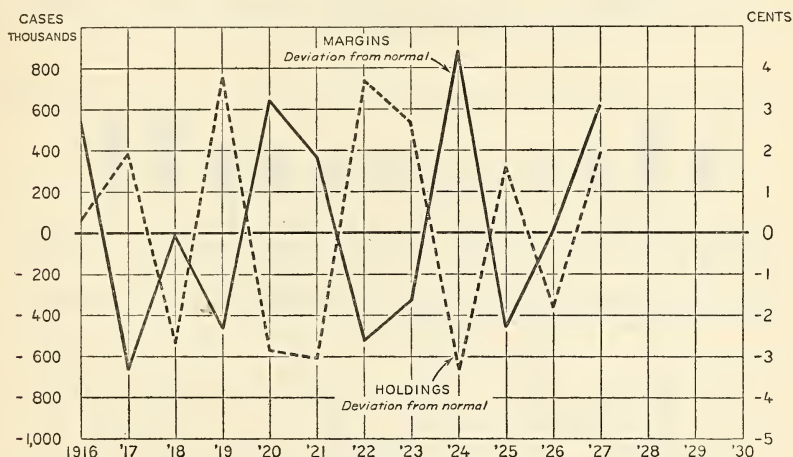


FIGURE 14.—UNITED STATES COLD-STORAGE HOLDINGS OF EGGS AND STORAGE MARGINS AT NEW YORK CITY

The relative profitableness of the previous year's storage deal is probably an important factor in determining the quantity of eggs placed in storage during the current year.

reputation for reliability of the pack, is an important factor in determining these differentials.

CALIFORNIA EGGS IN NEW YORK CITY

The relative importance of California eggs in the New York City market receipts is shown in Figure 15, and the seasonal swing of New York City prices is shown in order that the relation between the production cycle in California and prices at New York City may be seen. Although California receipts at New York City reach their high point after the price has started downward, the California production cycle is well adapted to take advantage of the price cycle in the eastern market. It would be of benefit to producers if some of the December shipments could be made in November. This could be accomplished, if at all, only through a change in the production cycle, possibly through earlier laying by pullets. A comparison of the 1926 figures shown in Figure 16 with the average for the five years

1921-1925 indicates that some of this adjustment probably was made in 1926. Just how much more of this can be done is a matter outside the scope of this discussion.

The relation of the prices on the New York City market of Pacific Coast White Extras and grades representative of eastern-production

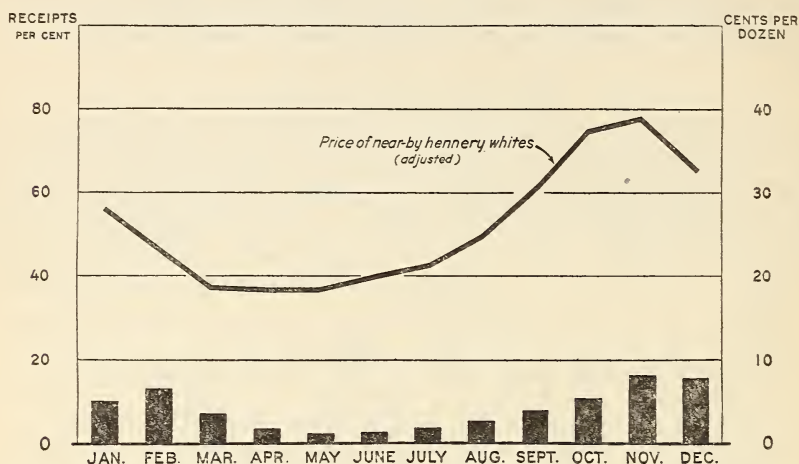


FIGURE 15.—RELATIVE IMPORTANCE OF CALIFORNIA RECEIPTS AT NEW YORK CITY MARKET AND NEW YORK CITY PRICE, MONTHLY AVERAGE, 1923-1927

Shipments of California eggs reach the New York City market at such times that advantage may be taken of seasonal price variations. California receipts on the New York City market were used as a percentage of total New York receipts.

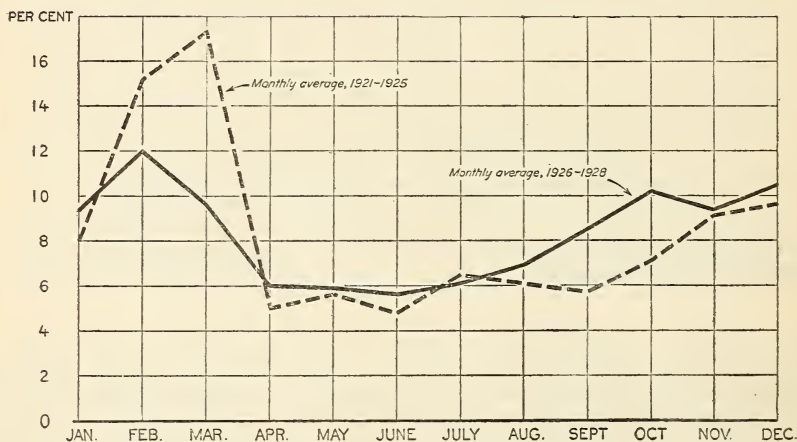


FIGURE 16.—CALIFORNIA EGG RECEIPTS AT NEW YORK CITY MARKET, 1921-1928

California producers have adjusted their production so that a larger volume can be shipped to the New York City market during the months when fresh eggs are relatively scarce. Curves show total California annual receipts on the New York City market.

areas, for 1926-1928, is shown in Figure 17. The quotation for Near-by Hennerly Whites (closely selected Extras) has been highest at practically all times. There are one or two times during the period when this is not true. A comparison of the price received by this

association with the range in the quotation for Pacific Coast White Extras indicates that there may be opportunity for improvement in the pack, inasmuch as the association's price is rather uniformly below the top quotation, and practically always below the mid-point.

The opinion is sometimes expressed that the price paid for eggs to be put in storage will determine their selling price. Careful analysis will indicate that this is not true. A commodity must be sold for what it will bring, regardless of cost, and the available supply is usually the most important factor in determining what the sale price will be. A comparison of the price of storage-pack eggs during the into-storage season with similar prices during the out-of-storage season indicates that there is little apparent relation.

MARKET PREFERENCES

If the merchandising program is to be effective in returning to members a price somewhat higher than the average of the market, it must

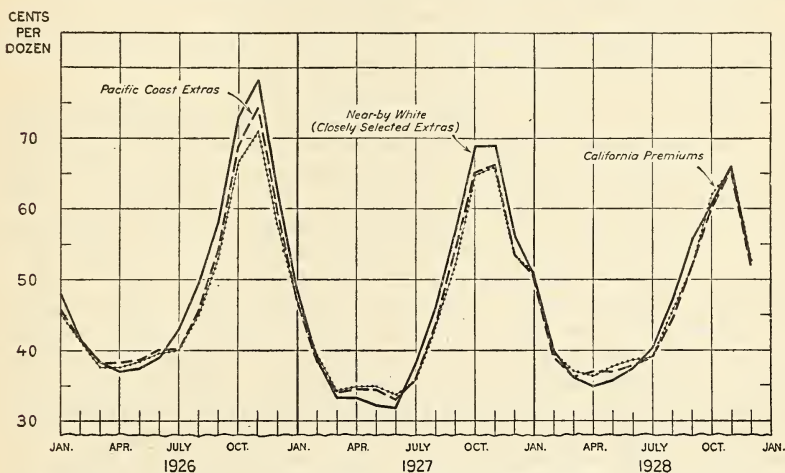


FIGURE 17.—PRICE OF CALIFORNIA PREMIUMS, NEAR-BY, AND PACIFIC COAST EGGS AT NEW YORK CITY, 1926-1928

Prices for the best quality white eggs tend to keep closely together. California Premiums are approximately equivalent to United States Extras.

be predicated on a thorough understanding of the factors which influence that market. Among the important factors, as has been pointed out, are the peculiar prejudices which different parts of the market have for or against a given product. In order to take advantage of these preferences and to, at least in some measure, overcome prejudices, it is important that any organization have a clear understanding of the peculiar psychological factors found in the markets to which it desires to appeal most strongly. No merchandising program can be effective which does not take these factors into account.

In order, therefore, that some measure of the effectiveness of the merchandising program of this organization might be had, it seemed essential that a study be made in at least one of its principal markets, looking toward the uncovering of some of the more important preferences or prejudices. Especially was it desired to learn something

of those which might reasonably fall within the field of the association's operations either to correct or to overcome.

Inasmuch as New York City is the largest single egg market, and unquestionably the most important market for white-shell eggs, and the market through which this organization sells a considerable portion of its product, it was decided to attempt the collection of some data regarding preferences in this market. There were further considerations in arriving at the decision to pursue the work in New York City, such as the wide variety of nationalities concentrated in a small area and the very wide range involved in the economic status of the family and in the types of employment.

The questions asked of members of the trade and of consumers aimed to discover prejudices which had to do with the grading, the interior as well as exterior quality of the product, the method in which it was handled, and similar items. Briefly, the purpose was to discover where preferences originated—whether with the consumer, the retailer, the jobber, or the wholesale receiver.

It is unlikely that the preferences found in other markets will agree exactly with those found in New York City. Hence, those discussed here may have only limited general application.

The desired information was obtained through personal interviews by individuals trained for that type of work. In preparation, a carefully worked-out schedule of questions was prepared for each group of consumers to be studied. Every effort was made to obtain a random sample from the various groups. The entire island of Manhattan was covered. No attempt was made to obtain information from any particular individual because of his status, either in the trade or in the consuming group. Interviews were held with 245 wholesale receivers and jobbers, 385 retailers, and 503 consumers. The schedules were then carefully edited, and the data contained therein were compiled. Many questions were included in the studies which are not specifically reported upon here. Many of these were shaped to determine the weight which might be given to an individual's opinion; others were for the purpose of checking answers to other questions, so that the finished schedules might be as satisfactory as possible. After all were edited and the incomplete replies were thrown out, a total of 1,133 remained which were satisfactory for use in preparing the tabulation.

TRADE AND CONSUMERS INTERVIEWED

It might appear that those in the dealer group could be considered as a whole in this circular since they seem to perform the same function, to operate in much the same competitive field, and to be similar in many other respects. On the other hand, there are some interesting variations in their practice of securing and selling their supplies of eggs which make it worth while to differentiate, at least in the beginning, between the two types which seem to be present. About 30 per cent of those interviewed fell in what might be called the wholesale-receiver group; that is, they were dealers who in general largely handle brown eggs in carload lots secured direct from producing sections, in which they usually maintain their own buyers or solicitors. Only about 5 per cent of this wholesale-receiver group secure the majority of their supplies on the New York City market. In dispos-

ing of these eggs, as a general thing they do neither candling or grading but transfer them to customers "as is." Most of the eggs handled by this group come from the great mid-western brown-egg-producing section known as the Corn Belt. On the other hand, a very few tend to draw their total supplies from whatever producing areas will give them the best values for their particular trade.

The jobber group, on the other hand, tend to handle more white eggs than brown; consequently their supplies originate mostly in the near-by sections or on the Pacific coast. More than half of these supplies are obtained from shippers' consignments direct to the market. In general, it may be said that jobbers tend to candle eggs and, to some extent, to blend the grades and produce a pack suitable to their particular trade. As is the case with the wholesale receivers, practically none of this group secure total supplies from one area; they buy as the needs of the market and the supplies of the market vary, whatever quality seems to be best to suit their particular need.

The retail group comprised about 57 per cent individual-unit stores, 17 per cent stores of various kinds, 13 per cent chain groceries and chain dairy stores, and about 7 per cent delicatessens; the remainder were market stands and egg stands. They were well distributed over the city in the principal retail sections adjacent to important consuming sections of the type to be studied.

About two-thirds of the retail stores handled both fresh and storage eggs, although one firm reported that it did not handle any storage eggs. About 50 per cent of the stores claimed to grade and candle the product as received from dealers. They reported further that about 70 per cent of their purchases were white eggs and 30 per cent brown, which is almost exactly the reverse of the situation with the total receipts of eggs in New York City. This apparent discrepancy can be explained by the fact that the brown eggs move largely through channels which supply the large-scale consumers such as restaurants, hotels, and bakeries, whereas the white eggs move largely through retail channels into home consumption.

When eggs are displayed for sale, they are rarely marked anything other than "fresh" or "storage." It is almost impossible to discover the production area, as no indication is placed on the package by the retailer for the apparent reason, which he freely admits when carefully questioned about it, that the branding of the eggs from distant production areas would lead to the inference on the part of the consumer that they could not possibly be fresh or of a quality approximately equal to that of a local product.

Of the 503 consumers from whom satisfactory schedules were secured, 32 per cent were Jewish, 27 per cent Italian, 16 per cent Irish, 11 per cent American, 10 per cent German, and 4 per cent of other nationalities. The average size of family of this group was 4.6 persons; the Italian families only were somewhat larger than the average. Segregated according to income status (the amount of salary or wages reported as having been received), about 11 per cent received a salary of more than \$5,000; 51 per cent received a salary slightly below \$5,000 and in excess of \$2,000; 36½ per cent received a salary of less than \$2,000 a year.

Seventy-five per cent of the consumers buy from unit and chain groceries, although they also buy from all of the other types. One-third of the group tends to buy from chain stores, and Americans tend

to patronize chain stores more than do the other nationalities. The average purchase per week by these families was reported as 2.6 dozens, bought about 1 dozen at a time. Slightly more than 8 per cent buy in lots of one-half dozen or less.

As in the case of other groups, the consumer group was distributed rather generally over the island of Manhattan, and especial attention was given to securing a sample in each of the areas which represented the various income classes for the nationality selected. The object of the survey was to ascertain as nearly as possible the most important factors taken into consideration by buyers and consumers in determining upon the kind of eggs which they bought for their respective uses.

It was desired to develop information which would be useful to the cooperative egg-marketing organizations in shaping their merchandising program. A careful examination of the data tended to show that four or five important factors were taken into consideration and that all groups seemed to take each of these into consideration more or less in making their purchases. Two of these points were such that any change must be brought about through influence exerted during the production process; hence they constituted information which the cooperative organization should pass on to its members and thus secure their aid in the development of a satisfactory and effective merchandising program. Three of the points were of the nature of practices over which the association itself had considerable control after it had received the eggs from producers. The first two had to do with the color and flavor of the yolk and the color of the shell, and the other three had to do with the branding of the eggs, processing or shell treating them, and packing in cartons.

INFLUENCE OF BRANDS

With the idea of developing the position and the importance of branding in the merchandising of eggs, the question was asked as to what brands were preferred, if any. Approximately two-thirds of the buyers or jobbers insisted that they had no preference for any brand. A few of these did use their own brand for marketing the product after they had purchased it. Of the one-third who expressed preference for brands, more than half expressed interest in a well-known brand of western white eggs. The rest mentioned 10 or 12 brands, with no semblance of agreement on any one brand.

Among the reasons given for brand preference were light yolks, light shells, and even-running quality, although there appeared to be little consensus as to any definite reasons why brands of any kind were preferable.

Since the wholesaler, receiver, and the jobber have little interest in brands in the marketing of eggs, their opinion seemed to be echoed almost exactly by retailers, who answered that in the main they had little use or desire for branded eggs, two-thirds of them saying that they had no preference and did not sell branded eggs. An interesting side light as to why the retailer does not care for a branded product might be found in the fact that eggs are displayed by retailers in open lots without label as to their point of origin. The majority of retailers label with the price of the product, or with the word "fresh," or "near-by," giving practically no indication as to the source of the product.

If the product were in packages and covered by a brand, this method of sale would be impossible. A part of this is a reflection of the consumers' attitude when purchasing eggs. In nearly every instance it was found that the consumer tried to buy fresh eggs, without knowing where they came from, when they were gathered, or any other factor than shell color and that the seller had marked them as fresh eggs. Few consumers, if any, had more than the haziest kind of a notion about brands. In fact the retailers' answers to the question are a fair indication of the consumers' knowledge. Retailers indicate that only about 12 per cent of the consumers ask for branded eggs.

USE OF BRANDED CARTONS

One of the important factors in creating a brand preference among consumers is that of getting the product from the producer to the consumer under the original brand name and in as nearly as possible the same condition of quality in which it left the producers' cooperative-marketing organization. For this purpose, pasteboard cartons in the handling of eggs offer an almost ideal method of packing, but one is faced with the difficulty of keeping quality as originally put into the carton. The extent to which this can be accomplished is still unknown.

The development of a reliable, dependable, and practicable means of preserving the original quality is an essential of a satisfactory merchandising program. It is an interesting fact that the jobber and the wholesaler do not believe that a preference for carton eggs exists among the retailers. On the other hand, the retailers think that there is some preference for carton eggs among consumers; in fact, in the localities studied, about 60 per cent of the consumers stated that they preferred eggs in cartons. This preference, as expressed by the consumer, was not because the carton signified a product of superior quality but because there tended to be less breakage and the cartons were a little more convenient to carry. All of this seems to indicate a lack of information as to the real situation and what could be done with carton products. The development of some important consumer preferences for the branded product of producers' egg-marketing organizations might result from a thorough study of the situation.

PROCESSED EGGS

The so-called processing, or treating of the shells of eggs with mineral oil to preserve their original quality, is becoming an increasingly important factor in the marketing of eggs, and in getting to the consumer a product which tends not to deteriorate during the process of distribution. For this reason, jobbers were asked their attitude toward processed eggs. Judging from the answers, almost all of them had little use for eggs of this type. On the other hand, it is probable that an increasing volume of treated eggs is going into storage each year—jobbers and speculators finding that they tend to hold up better in storage than do eggs which have not been processed. Somebody buys them and uses them with more or less satisfaction, or the number going into storage each year would not be increasing. Retailers as a whole and consumers knew little about processed eggs.

Evidently this point offers an opportunity for the wide-awake cooperative-marketing organization to teach the consumer the use of these eggs.

APPEARANCE AND FLAVOR

All of the interviewed groups indicated a distinct preference for light-colored and for mild-flavored yolks. The dealers were unanimous in indicating a premium for white-shell eggs with light yolks; they feel that this is likely to continue, although there was some disagreement as to whether the premium was likely to increase or decrease. Elsewhere in this discussion it has been shown that premiums for white-shell eggs have been declining. On the other hand, no data are available to show the trend of the premium for light-yolk eggs. To a large extent, however, light yolks are synonymous with white shells.

Two-thirds of the retailers felt that their customers preferred light yolks and that almost as many had the same preference for mild-flavored eggs. Among consumers the preference for light yolks was more or less general, although it was much more evident among Jewish and Italian families than with the other nationalities. At the same time most of the consumer groups indicated that, while white eggs were used for serving purposes, brown eggs were bought at the same time for cooking purposes. Inasmuch as the brown eggs are somewhat lower in price than the white-shell ones, it is probable that this incentive among groups used to practicing thrift aids in influencing them to buy brown eggs for cooking purposes, for the distinct egg flavor of the darker yolks is not necessarily a disadvantage when it comes to cooking and baking.

As is the case with white-shell eggs, light yolks appear to be symbols of certain desired characteristics rather than the characteristic itself, and this symbol seems to have a different significance to the dealers and to the consumers.

To the dealer, a light-yolk egg with a firm albumen signifies a fresh egg and, possibly, the somewhat more careful practices common in commercial production. At present there appears to be no entirely complete and satisfactory explanation of the causes of dark yolks. The appearance of dark yolks under the candle may not be due to yolk of actually dark color, but to a weak or watery albumen which permits the yolk to come closer to the shell, thus causing a darker shadow; for the yolk shadow is all that is seen. Weak or watery whites have been commonly associated with storage eggs, which the dealers feel will not keep long after coming out of storage, or with eggs having the dark and somewhat strong yolk attributed to farm-flock production. Because candling will not reveal the past, but only the present condition, dealers tend to discriminate against eggs that show heavy yolk shadow, and to favor what they designate as light yolks.

To the consumer, light yolks and white shells appear to be synonymous with mild flavor. To a certain extent this is probably true, although it is probably possible to produce a dark-colored yolk having a mild flavor. As production practice stands at present, however, the tendency has been in the opposite direction; that is, to feed for mild flavor and light color of the yolk at the same time. The large quantity of production from the brown-egg areas usually tends to have dark yolks with a more or less distinct eggy flavor even when

fresh. This appears to be the characteristic which consumers who are discriminating in their taste want to avoid, and, as the commercial henneries have produced white shells, light yolks, and mild flavors at the same time, the preference has developed naturally for that type of egg.

PRICE AND SALES POLICY ON THE PACIFIC COAST

Development of an effective price and sales policy is probably one of the most important problems that confronts any cooperative-marketing organization. It is only through the development and successful carrying out of such a policy that the members will be able to obtain the full benefits from organization.

Full responsibility for the formulation of a sound price and sales policy must rest upon the board of directors. In discharging this responsibility they need to know thoroughly the factors which determine the price for their product, the reaction of price to changes in supply, what the effective demand is, and how it is reflected in the price, and the probable seasonal and other changes in price under varying economic conditions. In all these matters the manager can be of considerable help and his advice should be sought. Even with his council it will usually be found that further careful analysis, based on all available statistics, will be helpful.

In popular discussion, there are two theories as to what constitutes the best price and sales policy for a farmers' cooperative-marketing association. One of these assumes that it is the aim of a cooperative organization to effect such control of a product as to enable it to dictate an arbitrary price, without reference to supply and demand conditions. The other theory assumes that an organization can not maintain prices which are out of line with economic conditions and, in the long run, its members will receive the largest benefit through the development of a price and sales policy which attempts to adjust supply to market demand. This adjustment can be made only through keeping members informed of market needs and preferences and assisting them in making such changes in their production program as are practicable.

The futility of an attempt by cooperatives to fix prices arbitrarily without reference to supply and demand factors is indicated by the brief analysis of egg prices and their relation to some of the more evident demand and supply factors which has been given.

EARLY METHODS OF SALE

During 1917, the Poultry Producers of Central California sold the eggs of its members to members of the San Francisco Mercantile Exchange. Beginning with 1918, it attempted to dispose of its product through its own system of distribution. Since that time the policy has been to sell as large a part of its volume as possible in eastern markets, and to dispose of the remainder largely in the San Francisco Bay section.

During the early part of its history, the eastern sales were handled by a commission merchant located in New York City. This was not entirely satisfactory, and, in 1922 a subsidiary organization, the Pacific Egg Producers Cooperative (Inc.) with headquarters in New York City, was organized jointly by the cooperatives on the Pacific coast to act as their own marketing agency.

This has proved to be a more satisfactory method of handling the situation. It has not only reduced the cost of selling from about 60 cents per case to about 25 cents, but has enabled the western growers to exercise a definite control in the policies which govern the sale of their product and the development and exploitation of a very large market territory. At present, the Pacific Egg Producers Cooperative is responsible for all sales in the territory east of the Rocky Mountains and in foreign countries.

During the earlier years, the sales policies of the Poultry Producers of Central California appear to have lacked definiteness and to have been largely opportunistic. As the years have passed, and particularly during the last two or three years, this weakness has been largely eliminated, and the development of a policy founded on sound business principles appears to be well under way.

OUTLETS OF THE ASSOCIATION

There are really four types of outlet available to the association, and the use which has been made of each is shown in percentages of total volume in Table 10.

TABLE 10.—*Sales outlets available to the poultry producers of central California, 1922-1927*

Type of outlet	Percentage of total sales in—					
	1922	1923	1924	1925	1926	1927
Sales to retailers (San Francisco and Oakland).....	13.59	19.37	24.88	21.42	21.67	28.20
Sales to jobbers (San Francisco and Oakland).....	30.44	23.36	13.03	15.34	12.01	7.68
Sales at branch offices and local shipments.....	14.75	8.60	16.32	7.62	9.69	8.37
Eastern shipments and storage.....	41.22	48.67	45.76	55.62	56.63	55.75

The volume of eggs which will be shipped east is limited by the extent to which those markets will afford a satisfactory differential over the local markets and by the relative volume of the production which is of a quality to withstand shipment and arrive in condition to meet the eastern demand.

Because of the expense of shipment, only those products which will command the highest prices should be shipped. Not all eggs are of the character to withstand shipment and meet this standard. Eggs that do not should be sold locally. This does not mean that such eggs are necessarily of inferior interior quality. Many of them can not be shipped because of thin shells, a somewhat weak white, or other similar reasons. Others have cream-colored shells, or are irregular in shape and hence do not meet a preference on a market which offers a premium for the absence of such peculiarities. They are frequently, however, of equally good interior quality. To the extent that such production defects can be overcome by the producer members, a larger proportion of the production will be available for eastern markets.

It has been shown that the average premium for white eggs is declining in the New York City market. It is true, however, that only a relatively small volume of such eggs is sold at the top of the quotation. Profitable expansion of the sales in this territory, then,

should be predicated upon a grading practice which will enable larger volume to be sold at or nearer the top price, and the development and exploitation of other markets which will yield a net premium at least equal to that afforded by the New York City market.

Inasmuch as the sales objective of the association is to distribute as much of its volume as possible in eastern markets, because of the somewhat better net price which such a policy yields, the local market volume and policy must be dependent upon the working out of the eastern-sales effort.

There is a choice between two important outlets for the local volume—that is, sales to jobbers (wholesale sales) and sales to retailers. The branch-office local sales and local shipments are of relatively little importance, although, as population increases, these should tend to increase.

The whole selling program is aimed towards getting the product from producer to consumer over the shortest route. It has, therefore, been aimed towards selling as large a portion of the local volume as possible to the retailer, rather than to the other market agencies, wherever this would probably result in a higher net price to producers. The working out of this policy is seen in the decreased portion of the volume which has been sold to jobbers and the increased volume disposed of to retailers. (Table 1.) The practice has apparently increased the cost of doing business, but the increased price received for the product has more than offset this cost.

LOCAL-SALES PROBLEMS

In the practical working out of its local-sales problem, the policies of the association have been changed several times. At one time it followed the practice of attempting to maintain the local-market quotation by buying and selling on the exchange through a subsidiary. This policy has now been discontinued.

Before its abandonment, it was argued that inasmuch as the purchase and sale of eggs, both in the country and in the local market, were made at a price based on the exchange quotation, maintaining this quotation at a high level would tend to make it easier for the association to sell its product at a high price and, further, it would enable the association's product to be sold in distant markets at a higher price inasmuch as the country buying of competitive eggs was high. The fallacy of such theories should be evident. The supply, and not the purchase price, determines the price of the article, regardless of any quotation maintained by artificial means. Furthermore, there are other results which follow the working out of such a policy which may not be advantageous to the cooperative.

In general, studies by the United States Department of Agriculture tend to show that the producer joins a cooperative with the expectation that it will secure for him a net return somewhat better than the outside producer enjoys. When this result is not forthcoming, and the outsider can secure the same price for this product without incurring the cost of the association's services, there is small incentive for joining, and only small inducement for those who are already members to continue. If an association is to continue a policy of maintaining the general market, there are probably two ways by which it can insure a satisfied membership; it must sell its

product at a premium over the market, and it must keep its operating costs below those of independent operators. The first can usually be achieved only through the successful carrying out of a long-time merchandising program which develops a market preference for its product. The second is difficult to do because a cooperative performs many services for its members which private operators are not required to perform.

There are other factors, too, which tend to hamper the association. The maintenance of a high outside price tends to stimulate production of the commodity in the whole field, and to attract supplies from other areas to the maintained market, thus increasing the competition for markets in which the product must be sold. On the other hand, a return to members higher than that realized by outsiders tends to stimulate production only among members, the marketing of whose products is under the control of the association.

It is sometimes argued that a cooperative should buy in the open market when it deems prices to be too low, and sell when prices rise. It would seem that such proposals leave entirely out of consideration the fact that a cooperative is formed, not as a trading organization to speculate in the commodity, but solely for the purpose of acting as the selling department for its members. As such, and only as such, is there a sound reason for its existence.

In the long run, therefore, it would probably be more advantageous for the association to attempt to obtain premium prices through a merchandising program which, because of superior grading and selling service, tends to develop a preference for its own product. Thus, volume may be increased and unit cost reduced.

Since the association discontinued the policy of local-market support and adopted one of merchandising its product on the basis of merit, the results appear amply to justify the change. In the working out of such a program it is essential that close contact with the customer be maintained, so that any failure in the exact quality to meet the buyers' needs will be ascertained. The extent to which a customer is satisfied with the product delivered determines largely his willingness to buy again. Sales of merchandise of a quality unsuited to the buyers' needs are almost certain to result in high customer turnover, wasted sales effort, and needless sales expense.

PRICE AND SALES POLICY IN EASTERN MARKETS

The eastern sales policy of the Poultry Producers of Central California is essentially the same as that of the other Pacific coast egg cooperatives which market their products through the joint sales agency at New York City—the Pacific Egg Producers Cooperative (Inc.).

Sales are made to wholesalers, jobbers, and chain stores in carload or less-than-carload lots. As yet no attempt has been made to sell direct to individual retail units.

The larger buyers receive the benefit of the reduced cost of selling to them in the form of slightly lowered sales prices. In general the price at which sales are made is based on the market at the time of arrival, except that during the storage season sales are usually made on a price basis f. o. b. shipping point.

THE AUCTION

During part of the year the Pacific Egg Producers Cooperative (Inc.) employs the auction method of selling some of its eggs. Inasmuch as this method is not followed by any other egg-marketing association, some details of its operation may be of interest. Under the auction method, buyers bid for listed lots on the basis of samples which are displayed for their examination in a room adjoining the auction room during the period immediately preceding the auction. These samples usually consist of 12 cases selected at random from each grade of eggs in each car. They are brought to the sample room as soon as convenient after the cars are unloaded. Printed auction catalogues, giving the line and lot number of each sample and a brief description, are circulated through the market and in the sample room. The buyer has an opportunity, therefore, to examine the samples and make notations on his catalogue as to the price which he is willing to pay for a given lot.

The auction is held at approximately 2 o'clock each afternoon during the period from about August until March, and is conducted in the usual way by an auctioneer and the usual method of bidding.

That they may not have to accept bids at a price which they feel is below the general market level, the policy of naming a withdrawal price has been adopted. This withdrawal price, however, is not announced except when the bidding fails to equal it. In case this occurs, the auctioneer stops the auction and announces the withdrawal price. The sale is then resumed and, in most cases, the buyers bid up to and sometimes even exceed the withdrawal price. Occasionally the buyers feel that the auction price is too high and the lot is withdrawn from sale.

Naturally, the determination of the withdrawal price is probably one of the most important matters in the entire auction system. Upon the accuracy and market judgment displayed in this determination, probably hinges the feeling of members as to whether the auction is satisfactory. If withdrawal prices are too often above the point which the trade feels is justified, and withdrawals are too frequent, it will tend to discourage buyers from attempting to obtain their supplies at auction.

In the past, the organization has followed the usual method of gaging the market on the basis of all available facts and the opinion of those in the organization. A price fixed in this way is likely to be a rather rough-and-ready estimate. Within recent years, a statistician has been employed and considerable work has been done looking toward the development of a satisfactory method of estimating price on the basis of supply and demand information and the method of statistical analysis.

During the first years of the organization's existence the auction probably served as an important part of the selling machinery. As time has passed, its importance has diminished. During the 1924-25 auction season, 61 per cent of the association's sales in the New York metropolitan area were sold by this method. At present, only about 11 per cent are auction sales. Inasmuch as this trend is closely associated with the increased buyings of repeat customers, it is not improbable that the building up of trade confidence is tending to force the auction method of selling into a position of minor importance.

THE ALLOTMENT PLAN

Another unusual feature of the selling methods in use by the Pacific Egg Producers Cooperative (Inc.) is the so-called allotment plan, which has been worked out in connection with the selling of eggs during the storage season.

In brief, it is a plan whereby buyers estimate in advance the quantity and grade of eggs which they will want each week during the storage season and then place a tentative order for these eggs. The price which they are to pay is announced by the association during the week of shipments from the Pacific coast. The buyer has the option of canceling his order two weeks before the scheduled shipment.

As might be expected, the tentative orders show that the demand, in some weeks, exceeds the estimated supply and, in other weeks, leaves a surplus. Applications are therefore shifted, so far as possible, to adjust this matter, and each applicant is advised that his shipment has been scheduled. If conflict in orders arises, preference is given to those who are regular buyers for current consumption; others are accepted and scheduled in the order of application dates.

The plan appears to have worked satisfactorily so far. Its continued success depends upon the good will and cooperation of the dealers, and the accuracy of the estimates as to the volume produced and available. This estimate must be made some months in advance, but should improve as the statistical work becomes better organized. For the present, to protect customers against inaccuracies in the estimates of receipts, orders are accepted only up to 85 or 90 per cent of the estimated volume, thus leaving a margin the size of which probably insures that customers will not be disappointed.

Many details in the working out of the price and sales policy of an organization of this character would probably be of considerable interest to other concerns who desire to follow a tried method, but the attempt here has been to outline only the more salient and more important policies and practices which have been taken into consideration in building up what appears now to be a satisfactory price, sales, and merchandizing policy.

BENEFITS TO MEMBERS

In considering the achievements of the association, it is well to remember that it was formed at a time when the production of eggs in the area was beginning to exceed the demands of the local markets. Producers, therefore, were confronted with the problem of developing eastern outlets, and of preparing their product for market in such a way that it could be transported to distant cities in condition to satisfy the demands of the consumers. They also had to meet the problem of trade contacts and the stimulation of demand for California eggs in markets in which they were relatively unknown.

It is possible, of course, that new outlets for Pacific coast eggs would have been developed without organization, but it is a question whether these outlets would have been developed as rapidly and as efficiently as they have been by the association. The producers' interest in market expansion and inefficient and economical merchandising exceeds that of the middleman, who is interested primarily in his own volume of business and margins. There is abundance of cooperative marketing experience to demonstrate that whenever production

exceeds the demands of established markets, the producers themselves must undertake the task of developing new satisfactory outlets and of stimulating the demand for their product. With this understanding of its primary function, the association as a marketing agency may be credited with the following general achievements:

Development of outlets for California eggs in eastern and foreign markets, and the establishment of confidence in the product.

Establishment of satisfactory grades for eggs for central California, improvement in grading practices, and encouragement of improved production practices by its educational activities and its policy of returning to members market premiums for the better grades.

Development of efficient and economical marketing machinery, and, in the San Francisco Bay section, a reduction in the number of agencies between the producer and consumer.

MEMBERS' EXPECTATIONS

The interview with members showed that the members' expectations, as a result of the association's operations, were concerned principally with (1) a continuous outlet, (2) stabilized prices, and (3) increased prices. Those members who mentioned a continuous outlet, or "a sure market" and those who mentioned stabilized prices as their chief expectation from the operations of the association probably had similar conditions in mind. Stabilized prices presuppose a stable demand; a continuous outlet, in turn, tends toward the stabilization of prices.

A CONTINUOUS OUTLET

The benefits of the association already cited have tended to stabilize prices. It is clear also that the association has afforded the members a continuous outlet for their product. The association has made every effort to provide services which members want. Unquestionably, it has provided a market in which members can dispose of their products on the basis of grade and quality—something that did not exist before.

Those members who expected a sure market appear to have grasped one of the fundamental differences between depending on a farmers' cooperative-marketing association and a cash buyer as a market outlet. The cooperative is always ready to accept and market the products of members to the best of its ability. The cash buyer is willing to do this only when it is to his financial advantage. Frequently, at certain periods, he is unwilling to buy some commodities at all, because of the risks involved, or if he does buy, it is at a price sufficiently below the general market level to insure him against loss from price fluctuations.

INCREASED RETURNS

Approximately an equal number of producers expected that the association would raise prices and that it would stabilize prices. These two groups may have had the same result in mind, that is, a better annual return to producers. The best annual return to producers that is possible under the production and marketing conditions that surround any particular industry will result from a stabilized price. Such a price must vary with changes in demand and supply conditions but should not, in the season of flush production, fall below the point where falling prices fail to increase consumption, and

the speculator comes into the market, nor should it, in times of scarcity, rise to the point where consumers will turn to substitutes for the commodity. The latter situation is especially disastrous. When consumers, because of high prices, have been forced to accept a substitute, a return to old habits of consumption will not be stimulated until prices have fallen considerably below the point at which consumption was curtailed. These extremes are the most serious aspects of the unstabilized prices which cause some considerable part of the producers' difficulties.

Some producers stated that they expected the association to "influence prices." It is difficult to determine just what is meant by this phrase. Some of these same members state that they expected prices to be increased, others that they expected a stabilization of prices. Only a very few were able to furnish concrete suggestions as to a method which might bring about the expected results, but taking the context of the answers to all questions and comparing the general thought expressed in them with the answers regarding the effect on price, it seems probable that a price somewhat better for members than for nonmembers was what was contemplated. This expectation tends to agree fairly well with membership studies which the department has made in other fields of cooperative endeavor.

The outline given of the benefits derived from the operations of the association does not consider the question of increased prices. It should be apparent that the conditions under which the association is operating are in no way comparable with those existing before its organization, and that price comparisons between the two periods have no significance. It is practically impossible, furthermore, to obtain prices realized by nonmembers which can be compared to association prices with any degree of accuracy. Association prices are weighted by volume sold, whereas any available outside prices do not take the volume or grade into consideration.

Accurate comparison is further complicated by the fact that the association's weekly prices are in the nature of an advance, which may or may not be increased by the deferred payment made at the end of the year. The exact amount of this payment is exceedingly uncertain, and varies from year to year according to the condition of the market and the policy adopted by the board of directors in making weekly payments. Furthermore, the grades used by the association and the grades used by others are not comparable, and this further complicates the possibility of accurately measuring the price relationship. To adjust or to take account of all of these differences between association data and outside information, if such could be secured, would be an impossible task. Hence, any price comparisons would be likely to be inaccurate and misleading.

Although frequently used by producers, price comparisons are especially inaccurate as a measure of the effectiveness of the operations of the association. The very presence of the association changes in some measure the whole price structure of the market. The extent of this change can not be measured at present. To do it, actual results would have to be compared with what might have been the results under a totally different set of conditions—a purely speculative and theoretical comparison.

REDUCTION OF MARKETING COSTS

Interviews with members indicated that a reduction in marketing cost was a benefit which many of them expected to obtain from the operation of the association. Costs are an important index of managerial efficiency, but it is obvious that they should be considered only in relation to the services performed. A cooperative may actually increase total costs or unit costs, either because it performs certain new services for the convenience of its members or assumes additional marketing functions, and yet be operating with a high degree of efficiency. A comparison of selling costs and volume of the association shows that for several years the total selling cost increased more rapidly than did volume. Later there was a decline in relative costs. It probably took several years to adjust the organization's machinery to the new line of work and to develop efficiency.

Attempts to compare the costs of the association with those of other operators face two important difficulties: (1) The entire absence of reliable cost data and outside operations; and (2) the fact that, were such data available, they would be of little use for comparative purposes, inasmuch as there is little likelihood of finding any other organization which performs the same services for the producers.

Again, the reduction of marketing costs must always remain a minor objective. The real objective is improvement in marketing methods to the end that the producer may receive a higher return for his efforts. Improvement often means the furnishing of additional services, and these services enhance the value of the product so that the net return is greater. When any cooperative can increase the net return to its own members, the members have comparatively little interest in the increase or decrease of marketing costs, if they are reasonably certain that the money is being expended wisely. Such a result can be achieved only through development of and adherence to a sound merchandising policy and efficient business methods.

Selling costs are an important item in the expenses of any marketing organization, and the reduction of customer turnover is one way in which such costs may be kept at a minimum. In any plan for reaching a larger number of customers, it is most important that particular attention be paid to a careful selection of customers and to the exercise of more than ordinary care in selling to those customers the exact quality of products which meets their needs. This tends to create satisfied customers and repeat orders, which tend to keep selling costs at a minimum. Regaining a customer lost through dissatisfaction with the quality of delivered product, or replacing him with a new customer, is a sure way to high selling costs and a needless waste of selling effort.

HOW THE ASSOCIATION HAS MET MEMBERS' EXPECTATIONS

Through their association the producers have been able to meet the problems which arise because of changing conditions in demand and production. The outline of its achievements indicates the principal ways in which these problems have been met. The membership study indicates that, in general, the association's policies have produced results which have satisfied the members' expecta-

tions. These policies have provided a continuous outlet, have tended to stabilize prices, and although accurate price comparisons are impossible, they have at least resulted in prices which are satisfactory to a majority of the members.

Changes in the total membership is probably one of the best indications of membership satisfaction with prices received. The membership record of the association shows that it has grown steadily. The number of active shippers also shows a steady upward trend with a seasonal variation caused by the elimination of shipments from small producers during the periods of low production. Hence, it may be concluded that, on the whole, producers who are members of the association are satisfied that it is doing a good job of selling the products, and that some portion of the outside producers gives evidence of a similar belief by becoming members.

Reference has already been made to the grades and grading practices of the association. Standardization of the product is the first essential in any merchandising program. Stabilized prices are an impossibility until there is stability in the grade and quality of the product. The association is entitled to a large part of the credit for the advances which have been made in standardization.

The work that the association has done to develop market outlets has been outlined. Through the Pacific Egg Producers Cooperative (Inc.) in New York City it has developed the machinery by which it can enter directly into the New York City market, and is rapidly expanding to cover all other profitable eastern markets, as well as certain foreign markets. Through this and the plan of selling direct to retailers in the San Francisco Bay section it has followed a policy that has shortened the marketing route.

This merchandising program has brought to the management information which has been helpful to members in showing how production could be made to meet market needs more closely, especially by the shifting of production so that a larger relative volume of fresh eggs would be available in the late fall and early winter, when prices are highest. This has necessitated a relatively large production of pullet eggs, inasmuch as all the older birds can not be relied upon for production at this time of the year. The result has been a decline in the percentage of Extras during the whole year but, probably, a more advantageous return to producers.

Integration of agencies, which usually means the shortening of the marketing route, nearly always means the furnishing of additional services, such as the establishment and maintenance of additional trade contacts through salesmen, furnishing deliveries, and providing credit at least for limited periods. These involve increased cost. The association, however, has assumed functions formerly performed by a group of middlemen, and because of its volume and relation to the grower is in a position to perform these functions economically and efficiently, and to obtain thereby a greater degree of consumer satisfaction, which in turn means a stimulation of the demand for the product. To the extent that total costs do not increase more rapidly than volume, or that unit costs tend to decline with increases in volume, the results of such shortening process will be advantageous to the producers.